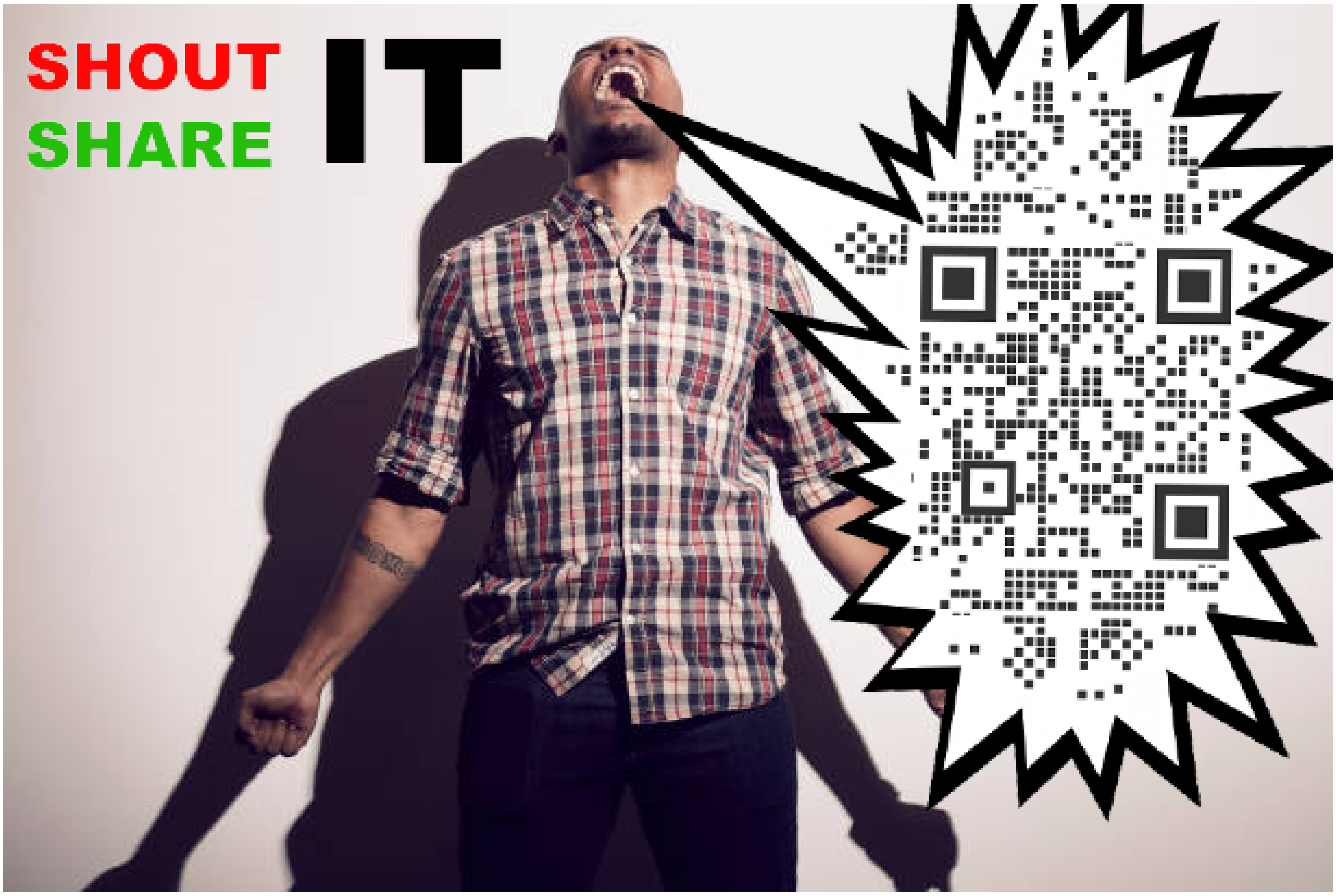
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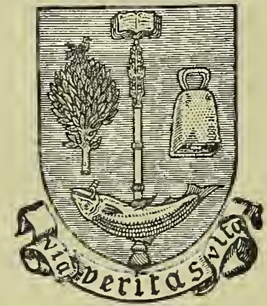
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THE BRITISH

FLORA MEDICA;

OR,

HISTORY OF THE

MEDICINAL PLANTS

OF

GREAT BRITAIN.

Illustrated by a coloured Figure of each Plant.

BY

BENJAMIN H. BARTON, F.L.S.

AND

THOMAS CASTLE, M.D., F.L.S.

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THE BRITISH
FLORA MEDICA.

CII.

ILEX AQUIFOLIUM.

Common Holly.

Class IV. Tetrandria.—*Order* III. Tetragynia.

Nat. Ord. Celastrineæ.

Gen. Char. *Calyx* four or five toothed, persistent. *Corolla* rotate, four or five cleft. *Stigmas* four, sessile. *Berry* spherical, containing four, oblong, one-seeded nuts. (Stamens and pistils varying from four to five, and some flowers destitute of pistil.)

Spec. Char. Leaves ovate, acute, shining, waved, with spinous teeth and apex. Peduncles axillary, short, many-flowered. Flowers sub-umbellate.

SYNONYMES.

Greek	*πρινος; αγριαν.*
Latin	Ilex aculeata baccifera. *Bauh. Pin.* 425. Agrifolium. *Ger. Em.* 1338. *Raii Syn.* 466. *Dod Pempt.* 745. Aquifolia. *Tragus,* 1067. Ilex Aquifolium. *Lin. Sp. Pl.* 181. *Eng. Fl.* i. p. 227. *Eng. Bot.* t. 496.
French	Houx; Houx commun.
Italian	Agrifoglio; Alloro spinoso.
Spanish	Acebo; Agrifolio.
Portuguese	Azevinho; Agrifolio.
German	Stechpalme; Stechbaum; Stecheiche; Walddistel; Halsendorn.
Dutch	Steekpalme; Hulst.
Danish	Stikpalme; Chrishorn; Stovtidse.
Swedish	Jernek; Christorn.
Polish	Ostrokzow; Kzewina.
Russ	Wacsoscheld; Ostrokrof.

Description.—Common Holly is a small evergreen tree, varying in height from four to thirty feet, or more, much branched, with the young shoots very smooth, pliant, and of a fine green colour; the bark is ash-coloured, very compact; the wood is hard, heavy, yellowish-white, darker towards the centre. The leaves are persistent, alternate, petiolate, coriaceous, of a deep shining green colour, ovate, undulated, and furnished at the margins with strong sharp spines.* The flowers are small, numerous, on short peduncles, somewhat umbellate, and spring from the axils of the leaves. The calyx is small, slightly hairy, and mostly four-toothed. The corolla is rotate, in four deep divisions, of a whitish colour. The stamens are four (sometimes five, and then the other parts of the flower have a corresponding development), spreading, with subulate filaments, attached to the base of the corolla. The germen is sessile, four-celled, and terminated by four sessile obtuse stigmas. (The pistil in some flowers is altogether wanting.) The fruit is a shining scarlet berry, nearly spherical, and includes four, bony, channelled nuts, each containing a single seed. Plate 26, fig. 1, (*a*) an entire flower, of the natural size; (*b*) calyx and pistil; (*c*) the berry, with part of the fleshy substance removed, to show the four nuts; (*d*) a nut, isolated.

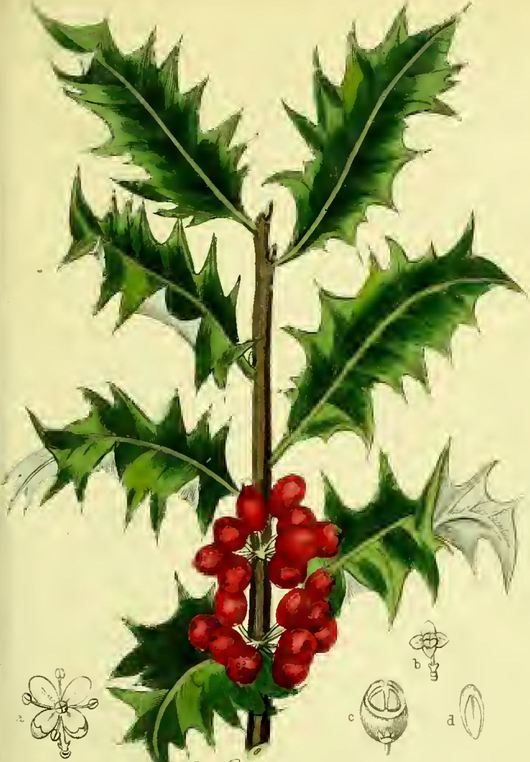
Common Holly is frequent in many parts of Britain,—in woods, coppices, and hedge-rows, especially in a light or gravelly soil, in sheltered situations; and, if not truly indigenous, it has been

---

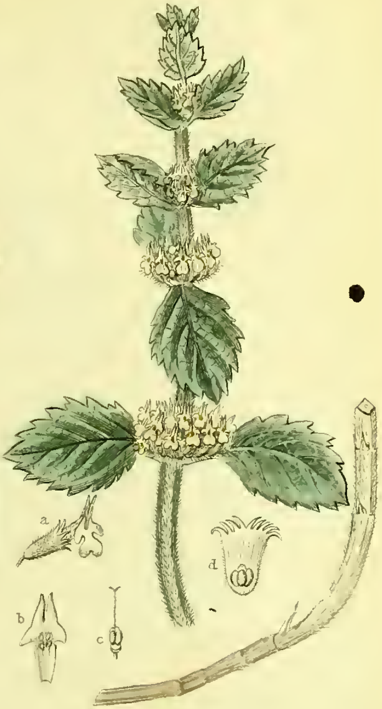
* It is a common opinion that the upper leaves of Holly are invariably smooth, entire, and unarmed, while the lower ones are edged with sharp spines: thus the poet Southey—

> "Below, a circling fence, its leaves are seen
> Wrinkled and keen;
> No grazing cattle through their prickly round
> Can reach to wound;
> But, as they grow where nothing is to fear,
> Smooth and unarmed the pointless leaves appear."

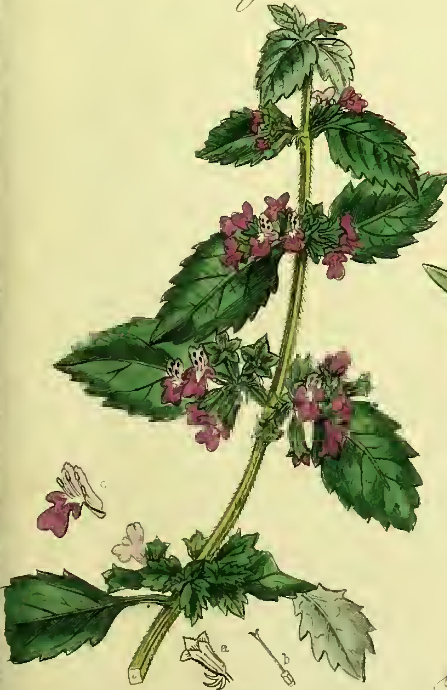
We would not affirm that such is not the case; but we believe this difference in the foliage is produced rather by natural than preternatural causes. All the leaves are at first tender and unarmed, and often entire, or nearly so; but as their growth advances, they become more or less spiny. The topmost leaves being the youngest, they appear constantly smooth and defenceless, while the lower are spiny, not necessarily from their situation, but in consequence of maturity; moreover, on the lowermost branches, unarmed leaves may be found taking the place of those which have fallen off. These remarks will only apply to vigorous plants; when the tree becomes old, it appears to lose the power of producing spines.



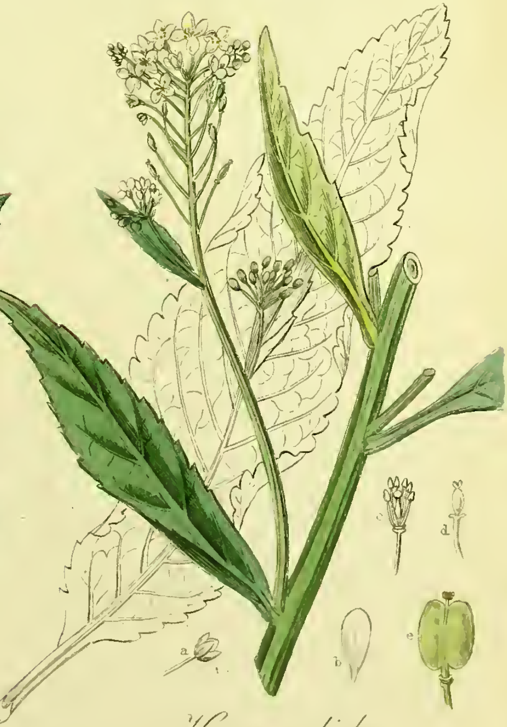
Holly.



White Horehound.



Fetid Horehound.



Horse-radish.

naturalized from time immemorial. There are some fine specimens of the tree in Needwood Forest, Staffordshire, and the woods of Dumbartonshire. It is a native of Europe, from Greece, northward as far as Scotland and Denmark. It flowers in May and June

"There are numerous varieties of this tree, chiefly depending on the variegation, margin and size of the leaves, and colour of the berries, which are highly ornamental in clumps, borders, and other parts of pleasure-grounds, affording much variety when judiciously intermixed. They are usually increased by budding or grafting on the common kind, which is easily raised from seed; for which purpose the berries should be gathered when they are ripe, mixed with sand, and turned over frequently till the October following, when they should be sown in beds covered over with mould three quarters of an inch thick; or the berries may remain on the trees till spring, when they may be sown. They do not vegetate till the second year."*

The genus includes about forty-seven species, the most remarkable of which are the *I. Vomitoria,* and *I. Cassive,* handsome shrubs, the leaves of which are used by the Indians for the preparation of their black-drink, which has powerful emetic properties, and is used by them not only as a medicine, but as a drink of etiquette on public occasions: also the *I. Paraguensis,* Maté or Paraguay Tea-tree.

The etymology of the term Ilex is rather uncertain. Theis derives it from *ac,* a *point,* in Celtic. The specific name Aquifolium is derived from *acus,* a *point,* and *folium,* á leaf, in allusion to the spiny leaves. Holly has received the provincial names of *Holme* and *Hulver.*

Qualities and General Uses.—Holly is much prized for making hedges, as it forms a most impenetrable and durable fence; but on account of the slowness of its growth, it is seldom employed. Evelyn had a holly-hedge at Says Court, four hundred feet long, nine feet high, and five feet broad, which he planted at the suggestion of Peter the Great, who resided at his house, when he worked in the dock-yard at Deptford. He exclaims in his Sylva, "Is there under Heaven a more glorious and refreshing object than such an impenetrable hedge, glittering with its armed and varnished leaves, blushing with natural coral." The branches of this tree are well known emblems of Christmas, being used to adorn our houses and churches at that season; a custom which Dr. Chandler thinks a relic of Druidism, "houses being decked with them that the sylvan spirits might repair thither, and remain unnipped by the frost and cold winds, until a milder season had renewed the foliage of their darling abodes." From its consecration to religious observancies, we have the name *Holly* i. e. *Holy-tree.* It serves for various useful purposes. Walking-sticks and knife-handles are made of the branches; the wood being very hard, and susceptible of a fine polish, is much used by turners, especially in the manufacture of Tonbridge ware; it is also used in veneering, and is sometimes stained black, to imitate ebony. The substance called bird-lime is chiefly obtained from this tree, and in the following manner:—The bark is peeled off in the month of July, and the outer rind, or brown epidermis, being removed, it is put into boiling water in an earthen vessel, and left in a damp place for about a fortnight; it is then taken out and well bruised in a mortar, until reduced to a kind of paste or mucilage, washed in cold water to separate extraneous matters, and finally left to itself for four or five days; the scum is then removed from the surface, and it is ready for use.

---

* Don's Miller's Dictionary, vol. ii. p. 20.

The sensible qualities of every part of this tree are rather feeble, but the bark has some resemblance to the odour of turpentine, while to the taste it is bitter and viscous. This viscidity is owing to the presence of a glutinous matter, chiefly abounding in the liber or inner bark, already mentioned as affording bird-lime; it is very soft, tenacious, and filamentous, condensing by cold, and liquefying by heat; soluble in alcohol, ether, and the fixed and volatile oils, but insoluble in water; thus bearing some affinity to caoutchouc.

Medicinal Properties and Uses.—Holly has hitherto been considered unworthy of a place in the legitimate Materia Medica, but recent investigations have proved it to be a remedial agent of no small efficacy. The old writers appear to have been slightly acquainted with its properties; they discovered that the berries were emetic and purgative; and Gerard, Ray, and others, mention that ten or twelve of them "are good against the colic." The root and the inner bark of the stem they also considered emollient and resolving, as also the viscid matter usually called bird-lime, which was recommended to be applied to tumours and to parts affected with gout.

Very little is recorded of the effects of the *leaves:* Haller* gave the expressed juice with success in jaundice; and Durant† states that intermittent fevers have yielded to a drachm of the powdered leaves, administered before the paroxysm. It has been reserved for Dr. Rousseau to point out the valuable febrifuge properties of this plant.‡ He states that the unjust neglect which this indigenous shrub has experienced had long engaged his attention, and from the successful results of twenty years' experience, he is enabled to propose the Holly as a febrifuge and succedaneum for cinchona bark. With truly benevolent feeling he speaks of the value of this remedy to the poor, who are often unable to procure quinine on account of the high price of that drug. Dr. Rousseau has discovered in the leaves of Holly a bitter substance, which is neutral, uncrystallizable, soluble in alcohol, and undecomposable by acids and alkalies:—this he considers the active medicinal principle. He has named it ILICINE.§ This substance, as well as the preparations of the leaves, he has given in various cases of intermittent fevers, with the most complete success. He relates sixty-five cases, some of them of an obstinate character, in four of which quinine and the other cinchonic alkalies had failed; also a case of nervous fever, complicated with daily paroxysms of ague, cured by Ilicine. He considers that several of these cases demonstrate not only the febrifuge action, but the sedative power of the leaves upon the spleen, liver and pancreas, especially when the sensibility of those organs has been increased by the use of cinchona.

The leaves may be administered in decoction, substance, extract, bitter principle (Ilicine), and enemata.

The *decoction* is prepared by boiling half an ounce of the fresh gathered or dried leaves in eight or ten ounces of water, which is to be boiled down to one-half. This quantity may be given in one dose, two hours before the paroxysm, and continued eight or fifteen days, if the fever does not yield to the fourth or sixth dose.

---

* Hist. Stirp. Helv. n. 667.

† In Memoires de la Societé de Med. à Paris, vol. i. p. 342.

‡ See the "Essay on the Use of Holly and Ilicine," by that gentleman, in the Transactions of the Medico-Botanical Society of London, 1832-33, for which the silver medal of the Session 1832 was awarded.

§ The following is one of the modes by which it is obtained: "Make an alcoholic extract of the leaves of Holly, which should be mixed with water, and afterwards treated with subacetate of lead, sulphuric acid and carbonate of lime; alcohol should then be added, and the product when dried affords ILICINE." Two pounds of dried leaves afford rather more than two ounces of Ilicine. It is insoluble in ether, soluble in alcohol at 36°, and even in warm water." For further information respecting the properties of this substance, see the Memoir alluded to.

In *substance*, the leaves are to be powdered and passed through a sieve, and one or two drachms macerated in white wine for twelve hours, or made into a decoction with water, not strained. This may be given two or three hours before the paroxysm, and may be repeated if necessary.

In *extract*, from half a drachm to a drachm, in the form of pills.

As *Ilicine*, in doses of twelve grains, gradually increased to eighteen or twenty-four grains, in pills.

In *injection*, on the authority of Dr. Constatin, who recommends half an ounce of the leaves to be boiled for a quarter of an hour in a sufficient quantity of water to form a clyster. These injections produce copious evacuations without griping.

CIII.

LONICERA PERICLYMENUM.

Common Honeysuckle or Woodbine.

Class V. Pentandria.—*Order* I. Monogynia.

Nat. Ord. Caprifoliaceæ.

Gen. Char. Tube of the *calyx* five-toothed. *Corolla* tubular, with a five-cleft irregular limb. *Berry* one to three-celled; cells few-seeded.

Spec. Char. Leaves all separate, deciduous, ovate-elliptical; sometimes downy, glaucous beneath. Flowers ringent, capitate, terminal.

SYNONYMES.

Greek	περικλυμενον.
Latin	Periclymenum non perfoliatum germanicum. *Bauh. Pin.* 302. Periclymenum. *Ger. Em.* 891. *Park. Theatr.* 1473. Caprifolium Germanicum. *Raii Syn.* 458. *Tourn. Paris.* 322. Lonicera Periclymenum. *Lin. Sp. Pl.* 247. *Eng. Fl.* i. p. 396. *Eng. Bot.* t. 800. Caprifolium Periclymenum. *Roem. and Schultes, Syst.* v. p. 362.
French....	Chevrefeuille; Chevrefeuille des bois.
Italian	Caprifoglio; Caprifolio; Madreselva; Vincibosco.
Spanish....	Madreselva; Sulla.
Portuguese.	Madresylva.
German....	Geissblatt; Je langer je lieber; Specklilie; Hahnenfüsslein.
Dutch	Geitenblad; Weeuwtjes; Mammetjes-kruid; Gewoone caperfoely.

Description.—Honeysuckle is a twining shrub, rising to the height of six to twenty feet; the root is ligneous, and gives off numerous creeping stoloniferous fibres; the bark is of a pale-brown colour; the branches opposite, tinged with purple. The leaves are opposite, ovate or somewhat elliptical, distinct, sessile, smooth, or somewhat pubescent above, glaucous beneath; the upper ones smaller. The flowers are large, yellowish or white, with roseate streaks, and are disposed in terminal, ovate, imbricated heads. The calyx is superior, small, and deeply five-toothed. The corolla is monopetalous, tubular, ringent, divided at the limb into five unequal segments, the lower being larger, and more open and revolute. The stamens are five, with subulate filaments attached to the upper part of the tube, terminated by oblong anthers. The germen is inferior, globose, with a filiform style, crowned by a clavate trifid stigma. The fruit consists of about six globose scarlet berries, collected into a terminal head, and accompanied by the permanent bracteæ; each berry has three cells when young, but when mature it is usually one-celled, and contains, in the midst of pulp, four or five crustaceous seeds, rounded on one side, convex on the other. Plate 27, fig. 3, (*a*) the corolla opened, with the stamens and pistil; (*b*) the head of fruit; (*c*) a berry cut horizontally, to show the seeds; (*d*) a seed, magnified.

Honeysuckle is plentiful in the hedges, woods, and thickets of the middle of Europe, and in similar situations throughout Britain. It flowers in June and July, and usually again in September and October.

The generic name was given in honour of *Lonicer*, a German botanist, who died in 1586. This species is most probably the *περικλυμενον* of the ancient Greeks, and was so denominated from *περικλειω* to *entwine.*

This plant, for the beauty and exquisite nectareous fragrance of its flowers, is a favourite denizen of the garden and shrubbery; but nowhere is it more beautiful than in its native recesses. Hence it is often mentioned by poets; some of the following quotations, however, are not very complimentary:—

> "Bid her steal into the pleached bower,
> Where honeysuckles, ripened by the sun,
> Forbid the sun to enter."
>
> *Shakspeare.*

"Upon a bank,
With ivy canopied, and interwove
With flaunting honeysuckle."
Milton, Comus, l. 545.

"Whether to wind
The woodbine round this arbour, or direct
The clasping ivy where to climb."
Milton, Par. Lost, book ix. l. 215.

Shakspeare has been wrongly accused of making the Woodbine and Honeysuckle distinct plants; his words are :—

"So doth the woodbine, the sweet honeysuckle,
Gently entwist the maple."

Milton certainly errs in calling it "twisted Eglantine," which is the name for Sweet-briar or Dog-rose. Shakspeare distinguishes them :—

"O'er-canopied with luscious woodbine,
With sweet musk-roses, and with eglantine."

The stems of Honeysuckle invariably twine in the same direction, viz., from right to left, or with the sun: this is also the case with the hop, bryony, &c.; while others, such as dodder, and convolvulus, constantly take a different direction.

There are two other British species, the *Pale perfoliate Honeysuckle* (*L. Caprifolium*), occurring in woods and thickets though rarely, characterized by its flowers in capitate whorls, and connate-perfoliate leaves; and the upright Fly Honeysuckle (*L. Xylosteum*), also rare; known by its two-flowered peduncles, small yellowish flowers, and ovate, acuminate, downy leaves. A variety of the common kind, named the Oak-leaved (*quercifolium*), is found near Oxford, and in a wood near Kimberly, Norfolk; it is distinguished, as its name indicates, by its leaves, which are sinuated like those of oak.

There are several foreign species of Honeysuckle, more or less noted for those qualities which render the common kind so much esteemed. They are easily cultivated in common garden-soil, by cuttings taken off in autumn, and planted in a sheltered situation. In raising the Honeysuckle from seeds, they should be sown the autumn after they are ripe, otherwise they will not come up the first year. Against a wall, the climbing kinds are very liable to attacks from aphides, and the caterpillar of Phalœna tortrix: the hawk-moths or sphinges, extract the honey from the very bottom of the flowers with their long tongues.

Qualities and General Uses.—This shrub has not only beauty and fragrance to recommend it, but has some claims to utility. According to Reuss, the root furnishes a sky-blue colour, and the branches may also be employed in dyeing. Kops* tells us that of the stem and branches are made teeth for rakes, weavers' stays, and tubes for tobacco-pipes. The foliage is eaten occasionally by oxen, goats, and sheep, but refused by horses. The leaves, when bruised, have a disagreeable odour and an insipid styptic taste. The juice imparts a red tinge to litmus paper. The bark has but little odour, and a slightly acrid and bitter taste, which it imparts by infusion to water. The aqueous infusion is of a yellowish-red colour, has a slightly narcotic odour and a bitterish taste, and assumes a dark hue with sulphate of iron. The berries have a bitter and nauseous taste; bruised and distilled in a sand-bath, they are said to yield an oily liquor.

Medicinal Properties and Uses.—The Honeysuckle is rarely, if ever, employed by the profession in this country; yet the bark, stem, leaves, and flowers, are possessed of properties which have claimed for the plant an admission into some of the continental pharmacopœias†. The bark is useful in gout; and, combined with other sudorific plants and woods, was highly esteemed by Ettmuller‡ for the cure of lues venerea. Its properties bear some affinity to those of sarsaparilla, which is a similar kind of plant. Schrœder, Bœcler, and Chomel, prescribe it both internally and externally. In decoction it is a tolerable diuretic; and according to Gardane, very serviceable in this form as a gargle in angina.§ The leaves, bruised, were applied by Chomel || to diseases of the skin; and the juice has been used with the same view, as also to cleanse foul ulcers. The flowers, in infusion or decoction, were considered by Hoffman cephalic, and by other practitioners have

---

* Flora Batava.

† Codex Medicamentarius *sive* Pharmacopœia Gallica; Pharmacopœia Genevensis, and Ph. Wirtembergica.

‡ Ettmul. Oper. Med., p. 532.

§ Gard. Gazette de Santé, 1774, p. 236.

|| Chom.; Usuelles, t. ii. p. 387.

been celebrated as an antispasmodic in asthma and cough[*] of the nervous kind; but the experience of the present day does not confirm the eulogia originally granted to them. An elegant water, however, is sometimes distilled from the flowers, which may be advantageously employed as a grateful perfume in sick rooms, and has been used as a collyrium. The berries are emetic and diuretic.

SYRUP OF HONEYSUCKLE.[†]

Take of Fresh Petals of Honeysuckle, four pounds;
Boiling water.............. eight pints.

Infuse for twelve hours in a covered vessel; express lightly; set aside the liquor for a few hours, decant, and add twice the weight of white sugar, and make a syrup.—Dose, two drachms to an ounce.

---

[*] Murr. App. Med. t. i. p. 553.

[†] Syrupus caprifolii, *Pharm. Gallica.*

CIV.

HUMULUS LUPULUS.

Common Hop.

Class XXII. Diœcia.—*Order* IV. Pentandria.

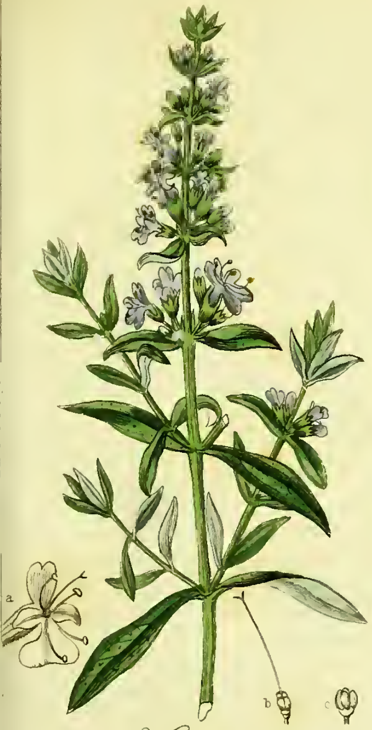
Nat. Ord. Urticeæ.

Gen. Char. Male flowers: *perianth* single, of five leaves; *anthers* with two pores at the extremity. Female flowers: *scales* of the catkin large, persistent, concave, entire, one-flowered; *perianth* none; *styles* two; *seed* one.

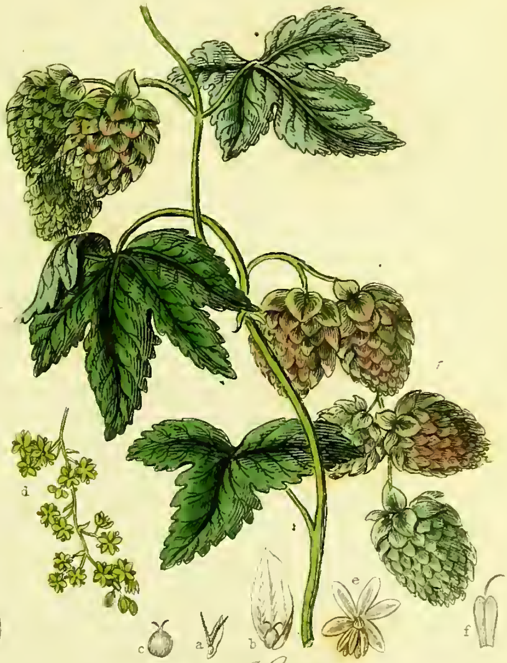
Spec. Char. (The only species.)

SYNONYMES.

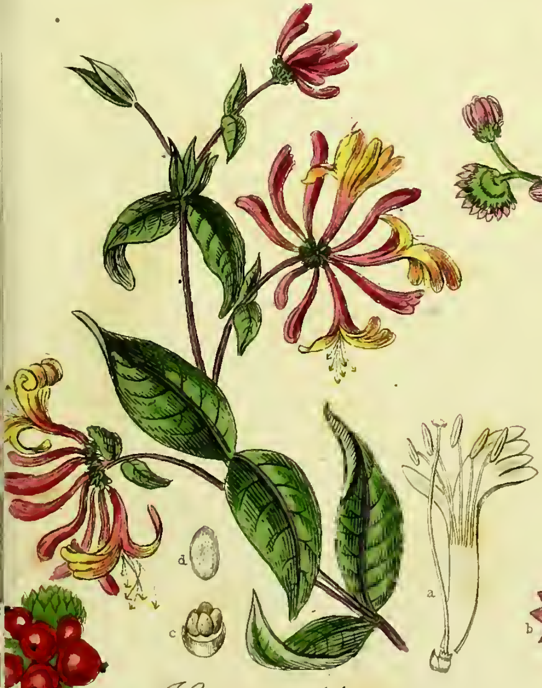
Latin......	Lupulus mas; lupulus fœmina. *Bauh. Pin.* 298. Lupus salictarius. *Ger. Em.* 885. Lupulus mas et fœmina. *Raii Syn.* 137. Lupulus seu sativus seu sylvestris. *Park. Theatr.* 176. Humulus Lupulus. *Lin. Sp. Fl.* 1457. *Eng. Pl.* iv. 427. *Eng. Bot.* t. 427. Cannabis Lupulus. *Scop. Carn.* ii. n. 1219. Lupulus communis. *Gærtn. Fr.* i. p. 358.
French.....	Houblon.
Italian	Luppolo; Luppoli.
Spanish....	Hoblon; Lupulo.
Portuguese.	Lupulo.
German....	Hopfen.
Dutch	Hoppe.
Dan. & Swe.	Humle.
Polish	Chmiel.
Hungarian.	Komlo.
Russ......	Chmel.
Persian....	Hymel.



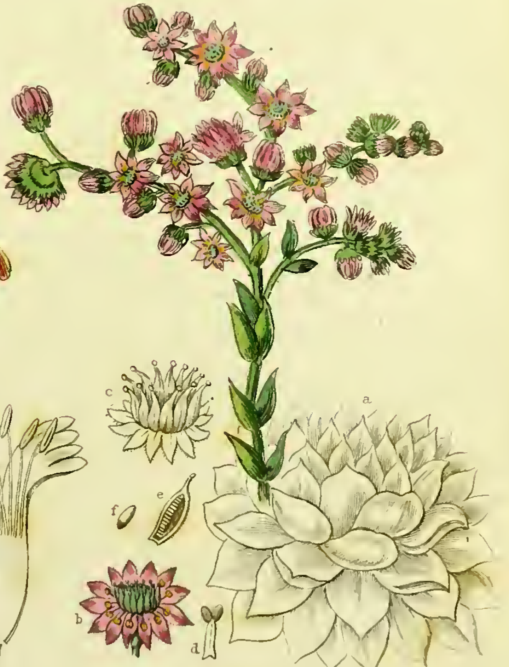
Hyssop.



Hop



Honey-suckle



Houseleek

Description.—From a perennial, ligneous, branching root, proceed several tough, flexible, striated, scabrous, slightly angular stems, which twine in a spiral manner around neighbouring plants in hedges, to the height of ten to twenty feet; and round poles as high as thirty feet. The leaves are opposite, the upper often alternate, petiolate, cordate, from three to five-lobed, sometimes simple, serrated, veiny, rough to the touch, being covered with minute asperities, of a deep-green colour, accompanied at the base by two small entire reflexed stipulæ. The male flowers are small, yellowish-white, and disposed in axillary and terminal pendulous racemes, the peduncles subtended by small lanceolate bracteæ: the perianth consists of five oblong, concave leaves; the five stamens are very short, with capillary filaments, and oblong two-celled anthers, opening by two terminal pores. The female flowers are supported on axillary, opposite, short, bracteated peduncles, and are composed of numerous ovate, obtuse, membranous scales or bracteæ, of a pale greenish-yellow colour, imbricated so as to form an ovoid cone or strobile; each bractea has in its axil two other scales (calyx of some writers) of much smaller size, incurved at the base, and each enclosing a small superior oblong germen, surmounted by two villous reflexed styles, with simple stigmas. The seed is roundish, compressed, margined, covered with a dry membranous integument of a reddish-brown colour, and sessile at the base of its scale, which is sprinkled with a resinous bright-yellow farina. Plate 27, fig. 2, (*a*) female flower; (*b*) calycine scale when the fruit is ripe; (*c*) fruit; (*d*) a raceme of male flowers; (*e*) male flower, magnified; (*f*) stamen, magnified.

This plant is not uncommon in thickets and hedges in this country, and is completely naturalized, if not truly indigenous. It also occurs wild in most European countries, and on the banks of the Missouri, and other places in North America. It flowers from the end of June throughout July.*

The generic name is said to be derived from *humus, moist earth*, as Hops flourish best in rich moist soils. Lupulus is a diminutive of *lupus*, a *wolf*; because, according to Pliny,† the plants suffered to grow among osiers, strangle and destroy them, as wolves the shepherd's flock. The Anglo-Saxon *hoppan*, to *climb*, is the parent of our modern word hop.

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* Hence the adage,—

"Till St. James'-day be come and gone,
You may have hops, or you may have none."

† Hist. lib. i. c. 15.

Several varieties of Hop are distinguished by cultivators, such as the garlic, the long white, and the oval Hop; the Flemish, Goldings, Canterbury, &c. The female plant is alone cultivated in hop-grounds.

The first mention of Hops occurs in a letter of donation by King Pepin, which speaks of Humolariæ; meaning, probably, hop-gardens. Beckmann does not find the word Lupulus to occur earlier than the 11th century. About the beginning of the following century, Hops were introduced into the breweries of the Netherlands. They seem to have been unknown in England till brought from Artois about the year 1524.*

Ale, the common drink of our Saxon ancestors, was made generally from malt alone, or clarified with ground-ivy, hence called alehoof, which was thought to render the liquor more wholesome. Parkinson says, "The ale which our forefathers were accustomed only to drink, being a kind of thicker drink than beere, is now almost quite left off to be made, the use of Hoppes to be put therein, altering the quality thereof to be much more healthfull." And Gerard makes a distinction between ale and beer: "The manifold vertues of Hops do manifestly argue the wholesomenesse of beere above ale; for the Hops rather make it a physicall drinke to keepe the body in health, than an ordinary drinke for the quenching of our thirst." For several years after the introduction of Hops, there was a strong popular prejudice against them. Henry VIII. issued an injunction† (dated Eltham, mensè, January 22) to the brewers not to put any Hops or Brimstone into the ale. Walter Blith, in his "Improver Improved," published in 1649, informs us, "That not many years since, the famous City of London petitioned the Parliament against two nuisances; and these were, Newcastle coals, in regard of their stench, &c, and Hops, in regard they would *spoyl the taste of drink*, and endanger the people." Now, however, severe penalties are inflicted on brewers who use any other bitters for preserving their beer: several articles are used, notwithstanding, and in large quantities, viz., extract of quassia, combined with liquorice, which is termed " multum," gentian, aloes, horehound, and the seeds of colocynth and broom; while to impart an intoxicating quality, an extract of cocculus indicus, called " black extract," opium, and tobacco, are said to be employed. The rhizoma, commonly called the root of Male Fern, appears to be the best substitute for the Hop in brewing.

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* Sir J. E. Smith quotes an old distich, which has some reference to the date of its introduction, viz., that—

> "Turkeys, carp, hops, pickerel and beer,
> Came into England all in one year."

† See a quotation from this MS. in Archæologia iii. p. 157.

In 1830, the number of acres cultivated with Hops in Great Britain were 46,727; and the average quantity of Hops grown annually has been computed at 20,000,000 of pounds.

Culture, &c.—Hops are generally planted in rows, six feet apart; five or six plants are generally placed together in a circle, and several feet distant from each other. It is propagated by cuttings, procured from the most healthy of the old stools. The plants are usually supported the second year by short poles, and the third year, when the plant comes into full bearing, these are replaced by poles of fifteen or twenty feet in height, from four to six of which are apportioned to each hill.

The proper time for gathering the Hop, is when the strobiles or chaffy capsules begin to assume a brown colour; about the end of August or beginning of September, the stalks are then cut two or three feet from the ground, and with the poles to which they are attached, placed horizontally on wooden frames. The Hops are plucked by women and children, and after being carefully separated from the leaves and stalks, are put into large sacks and carried away to be dried. The process of drying is performed immediately in kilns like those used for malt. Charcoal is the fuel usually employed, and the heat requires to be regulated with great care. When dry, they are packed in canvass sacks, called " pockets," each of which contains about one cwt. and a-quarter of Hops. In drying they lose about three-quarters of their weight. Hop plantations are proverbial for their uncertain produce, varying according to the season from two to twenty cwt. per acre. The expenses of cultivation are very great; but a plantation once in bearing will not need to be renewed for several years. Few plants are more subject to disease, and depredations from insects, such as the otter moth (Phalœna Humuli L.), the green fly, the red spider, and the honey-dew; to prevent which, Dr. Withering recommends to cover hop-gardens with stones or flags.

Qualities and General Uses.—The Hop is not only valuable as an ingredient in malt liquor; the young shoots or stems gathered in spring and boiled are eaten as asparagus: they are sometimes sold in the markets by the name of *hop-tops.* The stems or bines, steeped in water, then dried and dressed like hemp, make excellent cloth and cordage, and strong paper; for this purpose, in Sweden, they are gathered in autumn, and soaked during the winter, and in the following spring dried in stoves and prepared in the usual manner. From the leaves and flowers when dried, Dambourney procured a fine cinnamon brown dye, and the expressed juice of the stems affords a permanent red-brown colour.

The dried strobiles of Hops have a peculiar fragrant, heavy, subnarcotic odour, and a very bitter, aromatic, persistent, slightly astringent taste. Their virtues are extracted without heat by infusion in alcohol and ether, and by warm infusion in water; distilled in water they yield a volatile aromatic oil. "The watery infusion has a pale straw colour, which is rendered muddy by the mineral acids: alkalies deepen its colour; it strikes an olive with sulphate of iron; is precipitated by alcohol, solution of superacetate of lead, nitrate of silver and tartarized antimony; and when rubbed with magnesia or lime, a rod dipped in muriatic acid discovers the presence of ammonia. The ethereal tincture, when evaporated on water, leaves a pellicle of greenish, intensely bitter resin, and deposits some extractive. From these experiments Hops appear to contain resin, extractive, volatile oil, tannin, an ammoniacal salt, and what has been termed the bitter principle."*

The active principle of Hops, resides in a yellow, transparent, semi-resinous substance, which is sprinkled in the form of minute globules on the outside of the scales of the strobiles or cones, near the base, and on the seeds.† It is separated in part by friction, and collects upon the floors of the kiln and room where the hops are dried, and warehouses in which large quantities are kept, where it is called *coom.* It is known in the markets by the term *condition;* scientifically it is termed *lupulin.* Dr. Ives, of New York, discovered that by merely beating and sifting the Hops, the lupulin may be obtained, in the form of a fine yellow powder, which adheres to the fingers when rubbed, agglutinates by heat, and is very inflammable. He found by analysis that it contains tannin, gallic acid, extractive, bitter principle, wax, resin and lignin; though Dr. Bigelow thinks that some of these principles are the result of portions of the chaffy scales which come off with the lupulin. Dr. Ives remarks, that the process of gathering and drying the Hop should be performed with a view to the preservation of the powder,—that a great saving of expense would accrue from its employment in brewing, and the absorption of wort by the Hops, as generally used, would be obviated. He further observes:

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* Thomson's Dispensatory, 1836, p. 384.

† The exact nature of this peculiar secretion has not been satisfactorily explained. It is evidently connected with the economy of the floral organs, and it is said to be peculiar to the female plant. Is it affected by impregnation? Is it secreted by the stigmas? The male plants are those most commonly found wild in hedges, and a few often find their way into plantations.

"So far as can be determined from its sensible properties, a quantity of lupulin which has been kept in bottles for three years, and is now by me, has lost none of its aromatic flavour, or is in any respect deteriorated by keeping. That the lupulin possesses all the virtues of the Hop essential to the good quality and the preservation of beer, is demonstrated by an experiment made in 1820, by an experienced and respectable brewer in this city. He obtained, by threshing and sifting, from a bag of Hops weighing about 150 lbs., 21 lbs. of lupulin. Of this, and the usual quantity of other ingredients, he made forty barrels of beer; the quantity into which he ordinarily put 150 lbs. of Hops. The summer following, and not less than four or five months after it was made, I had an opportunity of comparing this beer with that manufactured about the same time in the usual manner. The former was less bitter, but in no respect inferior to the latter. It would, doubtless, have been better than it was, had all the lupulin been separated from the Hops used in the experiment. There can, therefore, be no doubt of the correctness of my former opinion, that if any mechanical means can be devised, by which the lupulin may be easily and readily separated from the strobiles, it will consummate an improvement of incalculable value in the art of brewing."

Payer and Chevalier have detected a volatile oil in lupulin, which is similar in odour to the Hop, but more penetrating, narcotic, and acrid in the throat. This oil at first escaped the notice of Dr. Ives, from its great volatility and solubility in water.*

Medicinal Properties and Uses.—The properties usually attributed to Hops are those of being stomachic, tonic, diuretic, more or less narcotic, anthelmintic, and antiseptic.

As a stomachic, it is more commonly taken as a beverage than in the character of medicine. In the State of New England, a fermented decoction, with the simple addition of treacle, known by the name of *hop beer*, is much used. When made sufficiently bitter with the Hops, and used as a common drink at meals, it promotes digestion more than any of the table liquor in common use. It is particularly adapted to obviate the lassitude and debility felt by persons of relaxed habits in the spring, or on the approach of warm weather. A simple infusion has been employed for that purpose, but the fermented liquor derives a quality from the presence of carbonic acid, which renders it more agreeable to the palate and stomach.[*] As a tonic it is very useful in some cases of dyspepsia, by giving tone to the stomach and allaying irritation; also in some stages of fevers, scrofula, atonic dropsy, and chronic cutaneous diseases.[†]

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* Journal de Pharmacie, Juin 1822.

That the Hop induces an increased secretion of urine, there can be no question; but its lithontriptic powers are very questionable. "Before it became generally used in brewing, it was employed medicinally for hypochondriacal and other disorders connected with acidity in the *primæ viæ*, as well as for the purpose of preventing or dissolving urinary calculi. When, however, its use in beer was become general, an outcry was raised against it, as inducing this last mentioned disease, for which it had formerly been given to cure; and it was affirmed, that the number of persons afflicted with stone and gravel were very alarmingly increased in the country. The Hop, however, stood its ground, and long experience has shown the groundlessness of the clamour raised against it."[‡] Ray,[§] moreover, remarks, that urinary calculi had become more rare since the introduction of beer; and this prophylactic effect of dissolving stone was likewise assumed by the result of experiments.[||] Besides its allowed tonic action, the Hop manifests considerable influence over the nervous system, particularly by inducing sleep and allaying pain; hence it is a valuable remedy in those affections accompanied with suffering and watchfulness. Dr. Maton found that besides allaying pain and procuring sleep, the preparations of Hops were capable of reducing the frequency of the pulse, and increasing its firmness in a direct manner. Dr. Bigelow[¶] justly concludes, that its narcotic power is slight when compared with that of opium; yet it nevertheless has, in certain cases, a decided property of procuring sleep. It has been found particularly effectual in the case of persons advanced in life, who have been accustomed to the moderate, but increasing use of spirituous liquors; and who at length have considered it impossible to procure a quiet night's sleep without a preparatory draught of this kind taken warm at bed-time. In such cases a teaspoonful of the Tincture of Hops will go as far, in its composing effect, as two or three ounces of ardent spirits. A pillow stuffed with Hop-flowers is said to have laid our late Monarch to sleep, when other remedies had failed.* Dr. Ives found that diseases which are the consequence of exhausted excitability, or more directly of a deranged state of the stomach and bowels, to be much relieved by this medicine, *lupulin.*† It frequently induces sleep and quiets nervous irritation, without causing costiveness, or affecting, like opium, the tone of the stomach.

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[*] Bigelow's Amer. Med. Bot. vol. iii. p. 169.

[†] Flore Medicale tom. iv. p. 110.

[‡] Waller; Brit. Herb. p. 202.

[§] Ray; Hist. Pl. vol. i. p. 157.

[||] Lobb, de Dissolv. Calc. p. 106.

[¶] Amer. Med. Bot. vol. iii. p. 169.

In decoction, the Hop is occasionally used with success as a drink to destroy worms,‡ or as a lavement for children against ascarides. In the same form, it has been advantageously used for painful tumefactions, gouty or rheumatic pains and contusions; and the powder, well mixed with lard, was recommended by the late Mr. Freake § as an application to cancerous ulcerations. A poultice, made with an infusion of the dried Hop, has likewise been efficiently applied to ill-conditioned and sloughing ulcers.

INFUSION OF HOP. ||

Take of Hops .... six drachms;
Boiling distilled water, one pint.

Macerate for four hours in a loosely-covered vessel, and strain. Dose, from one to two ounces.

TINCTURE OF HOP. ¶

Take of Hops................six ounces;
Proof spirit .... two pints.

Macerate for fourteen days, and strain. Dose, from half a drachm to two or three drachms.

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* Hooper's Med. Dict. 6th ed. p. 675.

† Most commonly used in the form of a tincture, prepared by digesting two ounces of lupulin in a pint of alcohol. Dose, from one to two drachms.

‡ Darelii. Socken. Apot. p. 58.

§ Med. Phys. Journ.

|| Infusum Lupuli, *Pharm. Lond.*

¶ Tinctura Lupuli, *Pharm. Lond.*

CV.

MARRUBIUM VULGARE.

White Horehound.

Class XIV. Didynamia.—*Order* I. Gymnospermia.

Nat. Ord. Labiatæ.

Gen. Char. *Calyx* with ten ribs, and five or ten spreading teeth; throat hairy. *Corolla* with the tube exserted; upper lip straight, linear, cloven; lower lip three-lobed, middle lobe large, emarginate.

Spec. Char. Stem erect; leaves roundish-ovate, toothed, rugose. Calyx with ten setaceous hooked teeth.

SYNONYMES.

Greek......	πρασιον.
Latin......	Marrubium album vulgare. *Bauh. Pin.* 230. Marrubium album. *Raii Syn.* 237. *Ger. Em.* 693. Marrubium vulgare. *Lin. Sp. Pl.* 816. *Eng. Fl.* iii. p. 103. *Eng. Bot.* t. 410.
French	Marrube; Marrube commun.
Italian	Marrobbio bianco.
Spanish. ...	Marrubio blanco,
Portuguese.	Marroyo branco.
German....	Gemeiner Andorn; Weisser Andorn; Marienwurzel.
Dutch.....	Malrove; Witte Andoorn.
Danish.....	Hvidrubike; Hvid Marrube.
Swedish....	Andorn.
Polish,....	Szanta biala.
Russ......	Marrub ili schandra.

Description.—The root is perennial, woody, and furnished with many fibres. The stems are erect, branched from the base, strong, quadrangular, covered with fine hoary pubescence or woolliness, and attain the height of twelve to eighteen inches. The leaves are opposite, petiolate, ovate or nearly round, thick, much wrinkled, unequally crenate-toothed, veined, covered with pubescence like the stem, and of a cinereous blueish-green colour; the flowers are small and disposed in dense, axillary, convex whorls, subtended by setaceous villous bracteæ. The calyx is tubular, with ten ribs and ten narrow bristly hooked teeth, five of which are alternately smaller; the throat hairy. The corolla is nearly white, bilabiate, with a cylindrical exserted tube; upper lip linear, straight, cloven; lower lip broader, three-lobed, the lateral lobes acute, reflexed, the middle lobe large and somewhat emarginate. The stamens are didynamous, included in the tube of the corolla, tipped with small oblong anthers. The germen is four-parted, surmounted by a simple filiform style and a bifid stigma. The fruit consists of four oblong nuts or akenia, situated at the bottom of the persistent calyx. Plate 26, fig. 2, (*a*) entire flower; (*b*) a section of the corolla; (*c*) pistil; (*d*) calyx opened to show the four nuts.

White Horehound is rather a common plant in England, on rubble and in waste places, particularly in warm dry situations; it is less frequent in Scotland and Ireland. It flowers in July and August.

The name Marrubium is said by Linnæus to be derived from *Maria-Urbs,* a town of Italy, situated on the borders of the Fucine lake; others suppose that it comes from the Hebrew *Marrob,* which signifies a bitter juice. It is thought to be the πρασιον of Dioscorides and Theophrastus, and the Marrubium of Pliny.

QUALITIES.—This plant exhales a fragrant odour, which is somewhat vinous or musky, agreeable at first, but soon fatiguing the sense. It has a bitter, penetrating and slightly acrid flavour, remaining long in the mouth. These qualities in great part remain in the dried herb, but they are destroyed by long keeping. Both water and alcohol extract its virtues; the extracts have a penetrating bitter taste, but the aroma is nearly all dissipated. "The infusion reddens tincture of litmus, gives a deep olive-green precipitate with sulphate of iron, a brown with nitrate of silver, and a pale yellow with muriate of mercury: acetate and superacetate of lead do not affect it. The active principles of Horehound appear therefore to be a bitter extractive, volatile oil, and gallic acid."*

MEDICINAL PROPERTIES AND USES.—That the White Horehound possesses some medical powers may be inferred from its sensible qualities; but its virtues do not appear to be so much valued as the records of different practitioners would fairly warrant. It is tonic, diuretic, emmenagogue, and laxative. By the ancients it was extensively used, with the view of removing obstructions of the lungs and other viscera.* It has likewise been very celebrated in humoural asthma, and particularly that kind attended with a redundance of viscid mucus,† in obstinate coughs,‡ and pulmonary consumptions.‖ De Haen§ and Haller¶ often found it fail.

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* Thomson's Dispensatory, 1836, p. 436.

Horehound has also been employed in chronic catarrhs of the urethra and bladder; in scarlatina, atonic dropsies, scurvy, leucorrhœa, and occasionally in worms, intermittent fevers, and for the dyspepsia of cachectic persons. It has moreover been recommended in hypochondriasis, hysteria, and obstruction of the menses. By Chomel** it is related (infused in wine) to have removed two scirrhous tumours in the region of the liver; Forestus,†† Zacutus Lusitanus,‡‡ also speak of its efficacy in resolving indurations of the liver. Dr. Cullen,‖‖ however, doubts the accuracy of these statements, and we think, justly considers the property here ascribed to Marrubium, very improbable. Borellus§§ exhibited an infusion to bring on the menses, and to relieve chlorosis; and the celebrated Linnæus¶¶ relates a case of mercurial salivation, of a year's standing, which was readily cured by the same means. Such have been the reputed beneficial effects of this plant; and from its still being retained in the British Pharmacopœias, we join with Peyrille and Alibert*** in asserting that it may be properly given in all cases where tonic remedies are necessary, and we also consider it entitled to be esteemed as a serviceable expectorant.

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* Dioscorides, lib. iii. c. 119, p. 223; also Pliny, lib. xx. c. 22.

† Rhazes ad Manson, iii. n. 49.

‡ Losecke; Arzneym. p. 382.

‖ Alex. Trallianus, lib. v. ed. Andern, p. 158. Celsus, lib. iii. c. 22, ed. Kravo, p. 171. Cœlius Aurelianus; Morb. Chron. lib. ii. p. 433, sq.

§ De Haen; Rat. Medend. P. iv. p. 252.

¶ Haller; Hist. St. Helv. n. 258.

** Chomel; Usuell. tom. i. p. 232.

†† Forestus; Oper. lib. xix. obs. 19 and 40.

‡‡ Zacvt. Lvsit. Prac. admir. lib. ii, obs. 49.

‖‖ Cullen; Mat. Med. vol. ii. p. 155.

§§ Borellus; Hist. et Observ. Cent. iv. n. 14.

¶¶ Linn. Flor. Succ. n. 531.

*** Flore Medicale, tom. iv. p. 245.

A drachm of the dried leaves in powder, or two or three ounces of the expressed juice, or an infusion of half a handful of the fresh leaves is the ordinary dose. This last mode is usually adopted by the common people, with whom it is still a favourite remedy in coughs and asthma.*

CONSERVE OF HOREHOUND †

Take of Fresh tops of Horehound .... one part;
White Sugar..................... three parts.
Beat them together. Dose, from half an ounce to an ounce.

SYRUP OF HOREHOUND.‡

Take of Leaves of Horehound............ two ounces;
Water .... one pint.
Infuse, and add to the strained liquor,
White Sugar .... four pounds.
Make a syrup, and strain. Dose, from half an ounce to two ounces.

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* Woodville, Med. Bot. vol. ii. p. 334.

† Pharmacopœia Amstelodamensis.

‡ Pharmacopœia Hispanica.

CVI.

BALLOTA NIGRA.

Black or Fetid Horehound.

Class. XIV. Didynamia.—*Order* I. Gymnospermia.

Nat. Ord. Labiatæ.

Gen. Char. *Calyx* salver-shaped, equal, with ten ribs and five broad mucronate teeth, naked within. *Corolla* with the upper lip erect, concave; lower lip trifid, middle lobe large, emarginate.

Spec. Char. Leaves ovate, crenate-serrate; teeth of the calyx shortly acuminate, spreading, longer than the tube of the corolla.

SYNONYMES.

Latin	Marrubium nigrum fœtidum, Ballote Dioscor. *Bauh. Pin.* 230. Ballote. *Raii. Syn.* 245. Marrubium nigrum. *Ger. Em.* 711. Ballota nigra. *Lin. Sp. Pl.* 814. Mentha aquatica. *Fl. Dan.* 673. Ballota fœtida. *De. Cand. Fl. Fr.* 2576.
French	Marrube noir; Marrube fétide; Ballote; Marrubin.
Italian	Marrubio nero.
Spanish ...	Marrubio bastardo.
Portuguese.	Marroyo negro.
German ...	Schwarze Ballote.
Dutch.....	Zwarte Malrove; Stinkende Andoorn.
Danish	Swoart Marrube.
Swedish ...	Swart Andorn.
Polish	Szanta Czarna.

Description.—The root is perennial, woody and fibrous, sending up several erect, straggling, branched, quadrangular stems, tinged with purple and clothed with woolly, recurved hairs, and rising two feet or more in height. The leaves are opposite, ovate, crenate-serrate, petiolate, clothed with soft hairs, and of a shining dull-green colour. The flowers are arranged in dense whorls in the axils of the leaves; the peduncles branched, subtended at the base by setaceous fringed bracteæ, which are shorter than the calyx. The calyx is salver-shaped, and divided at the rim into five short, mucronate, spreading teeth, and traversed by ten nerves or ribs. The corolla is of a pale reddish-purple colour, yellowish at the helmet; the upper lip erect, ovate, slighly concave, unequally crenate, villous; lower lip trifid, lateral lobes roundish crenate, middle lobe four times larger, emarginate, glabrous, marked with white veins. The stamens are didynamous, with subulate filaments shorter than the upper lip, terminated by oblong anthers of two spreading cells. The germen is small, four-parted, surmounted by a filiform style and a slender bifid stigma. The fruit consists of four small oblong nuts, nearly black when ripe, enclosed in the persistent calyx. Plate 26, fig. 3, (*a*) the calyx; (*b*) pistil; (*c*) corolla opened to show the stamens.

This plant is very common in waste places, hedges, and near ruins, in the vicinity of towns and villages throughout Britain, though less frequent in the north. It flowers in July and August.

The generic name is derived from the Greek Βαλλοτη, so called from Βαλλω, to *reject*, on account of its disagreeable odour. It is supposed to be the plant mentioned by Dioscorides, under that name.

Some botanists make another British species of Fetid Horehound, distinguished by its white flowers, longer tube of the corolla and more prominent calycine teeth, but this appears to be merely a variety of the above.

Qualities.—The whole plant has a strong disagreeable odour, particularly when bruised, and a nauseous bitter taste. The infusion slightly reddens tincture of litmus, and becomes of a greenish-brown colour by the addition of sulphate of iron. It has not been chemically examined, but it appears to contain a fetid volatile oil, bitter extractive, and various salts of potass.

Dioscorides observes that this plant is an antidote to the bite of a mad-dog; and other writers have copied this erroneous statement.

Thus in Beaumont and Fletcher's "Faithful Shepherdess" (act. ii.) we find :

> "This is the clote bearing a yellow flower
> And this black hore-hound both are very good,
> For sheep or shepherd bitten by a wood-
> Dog's venom'd tooth."

Medicinal Properties and Uses.—This species of Horehound is very rarely employed in medicine, although it possesses powerful properties, especially in hysteria and hypochondriasis.[*] The celebrated Tourneforte relates several instances of gout, if not absolutely cured, at least rendered much more tolerable and less frequent in its occurrence by the use of this plant.[†] It is seldom, however, taken internally, on account of its unpleasant taste and fetid odour. Externally, the leaves in form of poultice, or bruised with honey, resolve hard tumours, allay pain, and cleanse ill-conditioned ulcers. The same may be also beneficially applied to piles ;[‡] and by Boerhaave,[§] a decoction of the plant was esteemed an excellent detersive application in scald head. The inhabitants of Gothia consider it a panacea in most cutaneous diseases, as scurvy, itch, ring-worm, &c.

Black Horehound is best given in the form of an infusion, or of an extract, which is the most agreeable.

INFUSION OF BLACK HOREHOUND.

Take of the Leaves of Black Horehound	of each one handful.
Leaves of White Horehound	
Leaves of Betony	

Infuse in six pints of boiling water, and when cold, strain. A cupful to be taken three or four times a-day.

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[*] Raii Hist. Pl. 571.

[†] Waller ; Birt. Herb. p. 20.

[‡] Tabernæmontanus, in Geoff. lib. et loc. cit.

[§] Flore Economique, p. 77

CVII.

COCHLEARIA ARMORACIA

Horse-Radish.

Class XV. Tetradynamia.—*Order* I. Siliculosa.

Nat. Ord. Cruciferæ.

Gen. Char. *Silicle* oval or globose, with turgid valves, many-seeded. *Seeds* not margined. *Cotyledons* accumbent. *Filaments* simple. *Calyx* patent.

Spec. Char. Silicles ellipsoid. Stigma dilated, nearly sessile. Radical leaves large, oblong, crenate, on long footstalks; cauline ones elongated, lanceolate, toothed incised.

SYNONYMES.

Greek	Ραφανις αγρια, *Dioscorides.*
Latin	Raphanus rusticanus. *Bauh. Pin.* 96. *Ger. Em.* 241. *Raii Syn.* 301. Raphanus sylvestris. *Fuchs,* 660. Nasturtium foliis radicalibus lanceolatis. *Hall. Helv.* n. 504. Raphanis magna. *Mœnch. Meth.* 267. Cochlearia Armoracia. *Lin. Sp. Pl.* 904. *Eng. Fl.* iii. p. 177. *Eng. Bot.* t. 2323. *Dec. Syst. Nat.* ii. p. 361.
French	Raifort sauvage; Cran; Grand Raifort.
Italian	Rafano; Armoraccio.
Spanish	Rabano rustico; Rabano picante; Marvisro.
Portuguese..	Rabao rusticano.
German	Meerrettig; Rettig; Kreen; Kran.
Dutch	Meerradys; Meeredik; Peperwortel.
Danish	Peberrod.
Swedish....	Pepparrot.
Polish.	Chrzan.
Bohemian ..	Kren.
Russ	Chren.

Description.—The root is perennial, long, white, cylindrical, running deep into the ground, and is with difficulty extirpated. The stem is erect, cylindrical, smooth, branched towards the top, and rises to the height of two or three feet; the flowering stems angular. The radical leaves are very large, dark-green, oblong, crenated and much veined, supported on long footstalks; the cauline leaves are smaller, sessile, often incised, the uppermost elongated, lanceolate, toothed or quite entire. The flowers are numerous, and terminate the stem and branches in loose, racemose, paniculate corymbs. The calyx consists of four ovate, equal, concave, spreading, deciduous sepals. The corolla is white, of four cruciform petals, with an obovate, obtuse limb, twice as long as the calyx. The stamens are tetradynamous, simple, with subulate incurved filaments, terminated by yellow cordate anthers. The germen is roundish, oblong, surmounted by a short style, crowned by a capitate disciform stigma. The fruit is an oblong silicle, or pod, wrinkled, veiny, with turgid valves and slender dissepiment; two-celled, many seeded (often abortive). The seeds are small, globose and destitute of a margin; the cotyledons are accumbent (o=). Plate 26, fig 4, (*a*) calyx; (*b*) petal; (*c*) stamens and pistil; (*d*) pistil, separated; (*e*) fruit, or silicle.

Horse-radish is a native of Europe, in watery mountainous places. It has been found in several parts of England and Scotland apparently wild, but such plants are probably the outcasts of gardens.* It flowers in May and June.

The generic name is derived from *cochlear*, a *spoon*; the leaves of many of the species being hollowed like the bowl of a spoon. Armoracia is formed from the Celtic, *ar* near, *mor* the sea, *rich* against, viz., a plant growing near the sea. Horse-radish has been called provincially *red-cole*.

Like many other plants which increase chiefly by the root, Horse-radish seldom perfects its seeds. It is easily propagated by cuttings, and thrives best in a rich deep soil. Moisture increases its bitter and alkaline flavour.

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* Gerard, who seems to have considered it indigenous, has the following remarks upon it: "Horse-radish for the most part groweth, and is planted in gardens; yet have I found it wilde in sundry places, as at Namptwich in Cheshire, in a place called the Milne Eye; as also at a small village neere London, called Hogsdon, in the field next to a farme-house leading to Kings-land, where my very good friend, Master Bredwell, practitioner in phisicke, a learned and diligent searcher of simples, and Mr. William Marten, one of the fellowship of Barber-surgeons, my deare and loving friend, in company with him found it, and gave me knowledge of the place, where it flourisheth to this day."

Qualities and General Uses.—Horse-radish is universally known as a condiment to the roast-beef of Old England, and to some kinds of fish, also as an ingredient in sauces. Beckmann mentions the plant as well adapted for the purpose of tanning or currying leather. It is refused by all kinds of cattle.

The fresh root has a very pungent odour, soon causing tears, and a hot biting acrid taste, combined with a slight degree of sweetness.* By continued boiling, these qualities are entirely dissipated; and by drying, it loses more than half its weight, but still retains much of its acrid pungency. This, however, at length disappears, and it becomes sweetish, and finally bitter and insipid. It should be kept for use in a cellar, where, covered with sand or dry earth, it retains its virtues for a considerable time. Both water and alcohol extract its active principles. "The infusion reddens litmus paper, and precipitates solutions of acetate of lead and nitrate of silver." Its acrimony depends upon a volatile oil, which may be obtained by distillation with water; it is of a pale yellow colour, heavy, very acrid and pungent, and excites inflammation in the parts to which it is applied. The root also affords, by analysis, bitter resin, sugar, gum, starch, albumen, acetic acid, acetate and sulphate of lime, water and woody fibre. Einhoff † detected traces of sulphur in the distilled watery liquid.

Medicinal Properties and Uses.—The Horse-radish root is stimulating, antiscorbutic, diuretic, emetic, and expectorant; it sensibly promotes perspiration, urine, and the expectoration of viscid phlegm, and excites appetite when the stomach is weakened or relaxed, without being liable to produce immoderate heat or inflammatory symptoms.‡

Numerous experiments have put beyond all doubt the antiscorbutic virtues of this root.§ Ettmuller records several deplorable cases of scurvy and dyspepsia cured by an infusion in milk or in wine; one instance of a soldier, who with a scorbutic diathesis laboured under dropsy and œdematous swelling of the legs. In dropsy it is a valuable diuretic;[*] and has even been considered a powerful remedy in gravel, and in cases of urinary calculi.[†] Horse-radish may be advantageously administered in palsy and in chronic rheumatism, whether arising from scurvy or other causes. Bergius[‡] prescribes it to be swallowed in small pieces; in which form, by stimulating the coats of the stomach, as unbruised mustard-seed, it affords much relief to gouty and rheumatic persons. In affections of the stomach, especially of the scorbutic kind, Ettmuller[§] extols very highly an infusion of Horse-radish with the root of elecampane. This acts strongly by urine, and in dyspeptic and scorbutic cases may be considered a specific. If the root be infused in water, and a portion of this infusion be taken with a large draught of warm water, it readily proves emetic,[||] and may either be employed by itself to excite vomiting or to assist the operation of others.[¶] Respecting its expectorating qualities but little can be said; still, on the authority of Lind,[**] in the form of syrup, it is called "a divine medicine" in asthma connected with scurvy.

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* According to Lewis it contains, in its proper vessels, a sweet juice which sometimes exudes upon the surface.

† Annales de Chimie, lxx. 185.

‡ Lewis; Mat. Med. p. 465.

§ Barthol. Act. Med. Havn. vol. iv. p. 130.

Externally it readily inflames the skin, and proves a rubefacient that may be employed with advantage in palsy and rheumatism; and if its application be long continued, it produces blisters.

When taken internally, the dose must be from twenty to sixty grains in substance, or from twenty to forty drops of the juice.

SYRUP OF HORSE-RADISH.[††]

Take of Fresh Horse-radish roots, rasped....one drachm;
Boiling water.................... four ounces.

Infuse in a close vessel for two hours, and make the strained liquid into a syrup with double its weight of sugar.

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[*] Heist. Comp. Med. Pract. p. 212. Vel. Acad. Handl. 1766, p. 231.

[†] Lobb, de Dissolv. Calculos, p. 89, exper. 96, 97.—Hales; Statistical Essays, vol. ii. p. 215.

[‡] Bergius; Mat. Med. p. 559.

[§] Ettmuller; Oper. Med. p. 640.

[||] The expressed juice, even in a small quantity, produces vomiting, and that very roughly.—Waller's Brit. Herb. p. 204.

[¶] Cullen's Mat. Med. vol. ii. p. 167.

[**] Lind. Treat. on Scurvy, p. 265.

[††] Cullen's Mat. Med. vol. ii. p. 169.

A tea-spoonful or two of this syrup, swallowed leisurely, or, at least, repeated two or three times, has been found effectual in relieving the hoarseness which proceeds from an interrupted secretion of mucus.

COMPOUND INFUSION OF HORSE-RADISH.*

Take of Horse-radish root, sliced	one ounce;
Mustard-seed, bruised	one ounce;
Boiling water	one pint.

Macerate for two hours in a loosely-covered vessel, and strain; then add one ounce of Compound Spirit of Horse-radish. Dose, from one to three ounces three or four times a day.

COMPOUND SPIRIT OF HORSE-RADISH.†

Take of Horse-radish-root, sliced	twenty ounces;
Orange-peel, dried	twenty ounces;
Nutmeg, bruised	five drachms;
Proof spirit	one gallon;
Water	two pints.

Mix; and distil a gallon with a slow fire. Dose, from one to four drachms.

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* Infusum Armoraciæ compositum, *Pharm. Lond.*

† Spiritus Armoraciæ compositum, *Pharm. Lond.*

CVIII.

EQUISETUM ARVENSE.

Common Horse-tail.

Class XXIV. Cryptogamia.—*Order* II. Equisetaceæ.

Nat. Ord. Equisetaceæ.

Gen. Char. *Fructifications* terminal, in spikes, composed of peltate polygonous scales, producing on the under surface from four to seven involucres, which open longitudinally, and contain numerous globose bodies (capsules?), furnished at the base with four elastic filaments, thickened at their extremities.

Spec. Char. Sterile stems decumbent, with simple branches, slightly scabrous, with about twelve striæ; sheaths with about twelve lanceolate-subulate teeth. Fertile stem without branches, its sheaths remote, loose.

SYNONYMES.

Greek	ιππερις, Dioscorides?
Latin......	Equisetum arvense longioribus setis. *Bauh. Pin.* 533. *Park. Theatr.* 1202. *Raii Syn.* 130. Equisetum segetale et sylvaticum. *Ger. Em.* 1114. Hippuris minor absque flore. *Dod. Pempt.* 73. f. 2. Equisetum arvense. *Lin. Sp. Pl.* 1516. *Eng. Fl.* iv. p. 337. *Eng. Bot.* 2020.
French.....	Prêle des champs; Queue de cheval des champs.
Italian	Equisete; Coda di cavallo.
Spanish....	Equiseto; Cola de caballo.
Portuguese.	Cavolinha; Equiseto.
German....	Kannenkraut; Schlachtholm; Pferdschweif.
Dutch	Hermœs; Paardestaart.
Danish.....	Hestehade.
Swedish ...	Rœfrumpa.
Polish	Koszcka.
Russ......	Cchwostch.

Description.—The root is perennial, slender, dark-brown, creeping, and jointed, with numerous capillary fibres. The sterile stems are decumbent at the base, rising from one to two feet in height, with undivided, ascending, whorled branches, angular, with about twelve striæ, microscopically tuberculate, leafless, but furnished at each articulation with about twelve subulate, erect, dark-brown sheaths, which are membranous at the margin; the fertile stems, which appear before the sterile ones, are from six to eight inches high, erect, unbranched, leafless, smooth, tubular within, and of a silvery-brown colour externally; the sheaths are distant, erect, long, cylindrical, ventricose, striated, incised, and toothed. The fructification terminates the stem in a long, oblong, lanceolate spike, of a light-brown colour. (See Gen. Char.) Plate 28, fig. 2, (*a*) one of the peltate scales magnified, with its involucres discharging the capsules or sporules; (*b*) capsule, magnified.

This singular plant, which has been fancifully compared to a miniature pine-tree, is common in corn-fields and by road-sides in most parts of Britain. The fructification appears in March and April, after which the stems wither and disappear, and are succeeded by the sterile stems, which continue throughout the summer.

The generic name is formed from *equus*, a *horse*, and *seta*, a *hair* or *bristle*, signifying Horse-tail, in allusion to the form of the stem. The ιππȣρις of Dioscorides, and the Equisetum, Ephedron, and Anabasis of Pliny, are supposed to refer to one or other of these plants.

Eight British species of this genus are described. Excepting the one now before us, the great Water Horse-tail (*E. fluviatile*) is, perhaps, the most common: its branches are very numerous, often thirty in a whorl, and it forms a conspicuous object by the sides of rivers, lakes, and pools, in spring, its stems being frequently four or five feet high. The branched Wood Horse-tail (*E. sylvaticum*) is a graceful plant, inhabiting moist woods and hedge-banks; it is distinguished by its compound, whorled, deflexed branches, and sheaths with membranous obtuse teeth. The rough Horse-tail (*E. hyemale*) goes by the names of Shave-grass and Dutch-rushes. In a botanical point of view, these plants constitute an anomalous family, the nature and relative functions of their reproductive organs being by no means well understood.

Qualities and General Uses.—The cuticle of the stems of these plants contains abundance of silex or flint, which renders them very suitable for polishing hard wood, ivory, brass, &c. E. hyemale, often called *Dutch-rushes,* is much employed for these purposes by artisans, and was formerly used to scour and clean pewter dishes and plates, milk-pails, and other culinary articles. This species has been recommended as useful for tanning or dressing leather. It is a troublesome weed to farmers, especially in ground which has been reclaimed from rivers, and in fields where water stagnates in winter. It is seldom touched by animals, except the goat; and when cows have been driven by hunger to feed upon it, injurious consequences are said to have ensued, viz., diarrhœa, bloody urine, and abortion.*

It is nearly inodorous, and has a slightly saline, herbaceous, and styptic taste, producing in the mouth a sensation of dryness. Water extracts the whole of its sensible qualities. The aqueous infusion reddens but very slightly litmus paper, and is not much affected by sulphate of iron; hence its astringent powers would appear to be very feeble, and its reputed medicinal effects must be attributed to some saline ingredients, of which we have no analysis.

MEDICINAL PROPERTIES AND USES.—This plant is said to be astringent and vulnerary,† and an abundance of authorities are given by Bauhin‡ of its wonderful powers in curing or mitigating various diseases; the greater number, in all probability, the records of imaginary results. In the character of an astringent, it has been much used in dysentery, spitting of blood, ulcers of the lungs, phthisis, malignant fevers, uterine and other hæmorrhages, bloody urine, in ulcerations and wounds of the bladder, kidneys, and other intestines. Simon Pauli§ relates a very remarkable history of a girl, wounded accidentally in the bladder by a pointed knife, where the urine was discharged by the wound, and who recovered by the use of this plant, freely administered in decoctions and glysters. In spitting of blood, Geoffroy* recommends a drachm of the dried plant in powder with the juice of the pomegranate, three or four times in the day. Ettmuller† commends it in the morbid discharges of women, and in piles. Externally, he praises it as an application to indolent ulcers, to accelerate their contraction. In this case a strong decoction should be employed.

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* See Linn. Flor. Suec. p. 367.—J. H. Schulze in Act. Nat. Cur. vol. i. p. 521.—Haller; Hist. Stirp. Helv. n. 1677.

† Gerard thus describes its vulnerary properties, in his peculiar way:—"*Dioscorides* saith, that Horse-tail, being stamped and laid to, doth perfectly cure wounds; yea, although the sinues be cut asunder, as *Galen* addeth. It is of so great and singular virtue in healing wounds, as that it is thought and reported for truth, to cure wounds of the bladder and other bowels, and helpeth ruptures and burstings."—*Herbal,* p. 1116.

‡ Theat. Col. 252, 3, 4.

§ S. Pauli, in Florâ Danicâ.

In addition to its astringent and vulnerary qualities, Professor Lenhossek, of Vienna, has lately advocated the Horse-tail as a powerful diuretic. He says, that it neither oppresses the digestive organs, nor disturbs the nervous or sanguiferous system. He particularly recommends it in cases of serous effusions from relaxation or debility, or after scarlet fever or erysipelas, and condemns its use in dropsical swellings, attended with febrile symptoms.

The dose commonly directed is a drachm of the dry leaves in powder, or two ounces of the expressed juice. An infusion of the dried herb is frequently used as a tea by poor people for diarrhœa and other alvine evacuations.

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* Geoffroy; Mat. Med. tom. iii. p. 435.

† Ettmuller; Oper. Med. p. 504.

CIX.

CYNOGLOSSUM OFFICINALE.

Common Hound's-tongue.

Class V. Pentandria.—*Order* I. Monogynia.

Nat. Ord. Boragineæ

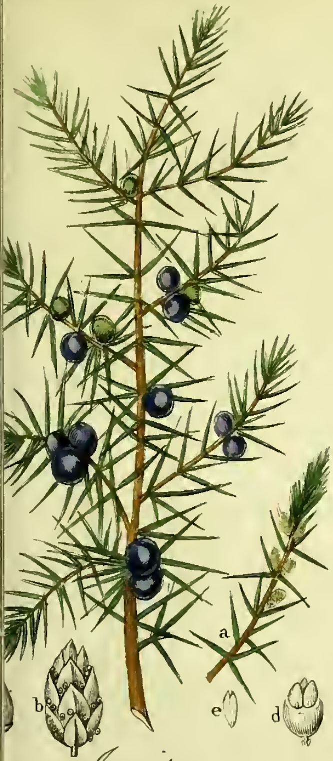
Gen. Char. *Calyx* four-cleft. *Corolla* funnel-shaped; tube short; mouth closed with convex, connivent scales. *Stigma* capitate. *Nuts* depressed, attached laterally to the style or central column.

Spec. Char. Radical leaves broad, lanceolate, waved, downy, attenuate at each end; cauline leaves sessile, the upper somewhat ovate at the base. Stamens shorter than the corolla.

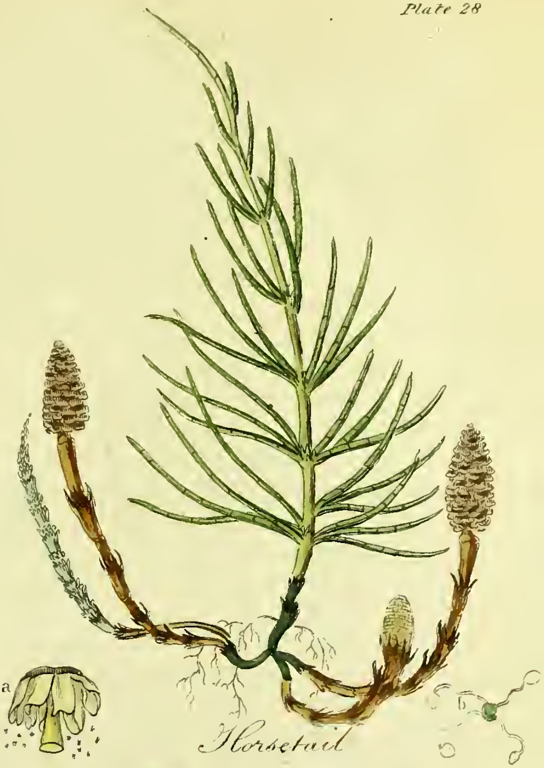
SYNONYMES.

Greek	*κυνογλωσσον.*
Latin	Cynoglossum, majus vulgare. *Bauh. Pin.* 257. *Ger. Em.* 804. *Park. Theatr.* 511. Cynoglossum. *Raii Syn.* 226. *Dod. Pempt.* 53. Cynoglossum officinale. *Lin. Sp. Pl.* 192. *Eng. Fl.* i. p. 260. *Eng. Bot.* t. 921.
French....	Cynoglosse; Cynoglose; Langue de chien.
Italian	Cinoglossa; Lingua de cane.
Spanish ...	Cinoglosa; Lengua de sabueso.
German ...	Hundszunge.
Dutch	Hondstonge.
Danish....	Hunde tungue.
Swedish ...	Hundtonga.
Bohemian .	Psy-gazyk.
Polish	Psi-jezik.

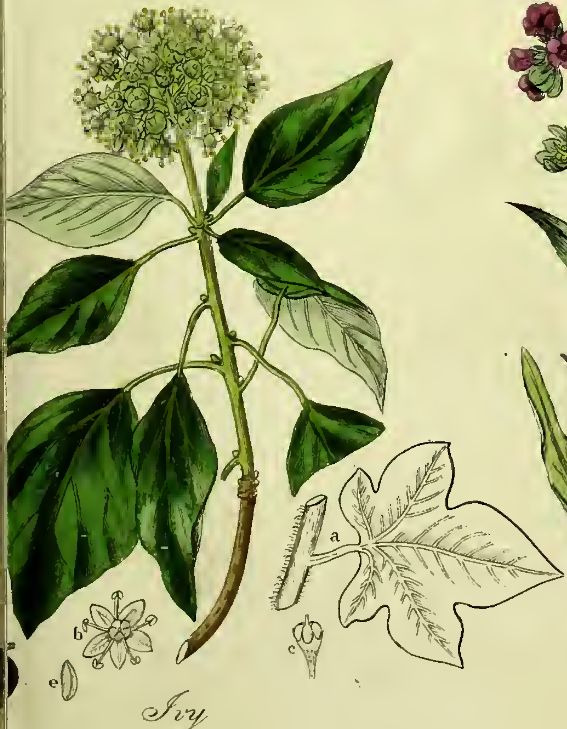
Description.—The root is biennial, long, fusiform, slightly branched; reddish black externally, whitish within. The stem is thick, erect, leafy, striated, villous, branched above, and attains the height of two feet or more. The leaves are numerous, alter-



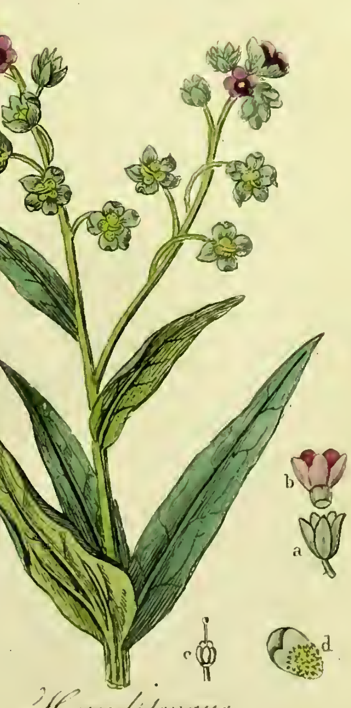
Juniper



Horsetail



Ivy



Houndstongue

nate, waved, pubescent, soft, of a greyish, dull-green colour, often a foot in length; the lower broadly lanceolate, attenuate, on long footstalks; the upper sessile, lanceolate, and somewhat ovate at the base. The flowers are small, supported on short peduncles, and arranged in terminal and axillary, paniculate, unilateral, slightly drooping racemes, each with a single amplexicaul bractea near the base. The calyx is inferior, deeply five-cleft, with erect, villous, sub-acute segments. The corolla is funnel-shaped, scarcely longer than the calyx, and of a dull crimson colour; the tube very short, thick, of a greyish colour spotted with purple; the limb concave, five-parted, with roundish, obtuse, veined segments, its mouth nearly closed with five oblong, convex, purple scales. The five stamens have short filaments inserted into the margin of the tube, alternate with, and just below the scales, and are tipped with cordate-oblong, greenish anthers. The germen is depressed, smooth, yellowish-green, four-parted, projecting from its centre a pyramidal style, as long as the tube of the corolla, surmounted by a capitate emarginate stigma. The nuts are four, globose, depressed, imperforate at the base, affixed laterally to the central column or style, very rough with prickles externally; each nut containing an ovate, gibbous, smooth seed. Plate 28, fig. 4, (*a*) the calyx; (*b*) corolla; (*c*) pistil; (*d*) a nut isolated, attached to the calycine segment.

Hound's-tongue is frequent in this country in waste ground and by road-sides, flowering from the end of May to August.

The generic appellation from κυὼν, κυνὸς, a *dog*, and γλωσσα, a *tongue*, and the vernacular names of the plant in this and most of the European languages refer to the shape and softness of the leaves, which have been compared to the tongue of a dog. It is not quite certain whether this plant is the κυνογλωσσον, of Dioscorides,* and the cynoglossos of Pliny.†

A variety of the above has been found with white flowers. The genus includes nearly fifty species, but two only of these are indigenous to Britain;—the subject of this article and the green-leaved Hound's-tongue (*C. sylvaticum*), characterized by its ovate, lanceolate, amplexicaul leaves, which are shining, bright-green, scabrous beneath, and free from pubescence.

Qualities.—The root, or rather the bark of the root, has a narcotic odour, and a saline, sweetish, disagreeable, viscid taste. The foliage has a similar flavour to the root, but more insipid, and a sub-narcotic fetid smell, which some have compared to that of the goat, and others to the odour of mice or dog's urine. The juice reddens litmus paper, and the watery infusion, which is of a reddish-brown colour, is changed to a brownish-black by sulphate of iron, and speedily throws down a dark-coloured precipitate. Schreck* states, that the distilled water of the recent herb is extremely nauseous and has a narcotic odour.

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* Mat. Med. lib. iv. c. 129.

† Hist. lib. xxv. c. 8.

The somewhat lurid appearance of this plant, and the fact that no animal except the goat will touch it, has caused it to be regarded with a degree of suspicion, which its fetid and narcotic odour tends to confirm. Some writers deny the narcotic properties of Hound's-tongue, but those who have gathered the plant in their botanical excursions and have had occasion to handle it for any length of time are well acquainted with its powerful narcotic emanations; in some cases producing nausea, giddiness, and fainting, followed by sickness.† This property, however, is nearly lost after the plant has been long kept, and it has then merely the cooling, sweetish, and mucilaginous qualities of Bugloss and Comfrey, to which it is closely allied. Soil, likewise, appears to have a material influence upon it; as, according to Hermann, those plants which grow in damp places have a rank, heavy, narcotic smell, while those produced in dry localities are nearly inodorous. There is no doubt that the different parts of this vegetable, like Henbane, &c. vary considerably according to age and season, and are most vigorous just before the epoch of flowering.

We have but few instances recorded of the poisonous effects of this plant when accidentally received into the stomach. Morrison ‡ relates, that a whole family at Oxford ate the boiled leaves gathered in mistake for those of Comfrey, and soon after dinner were seized with obstinate vomiting, followed by stupor and sleepiness; which symptoms continued alternately for nearly forty hours, and with such severity that one person died. Haller § mentions a similar instance, but there appears to be a doubt whether the cynoglossum or some other plant were the cause.

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* Diss. de Cynoglosso, p. 19.

† M. Chamberet (Flore Medicale, tom. iii. p. 140) says, "after collecting several specimens of Hound's-tongue, I was arranging them between sheets of paper for preservation, when I was seized with uneasiness and a sensation of fainting, succeeded by copious vomiting."

‡ Hist. Oxon. iii. tom. iii. p. 450.

§ Hist. Stirp. Helv. 587.

Medicinal Properties and Uses.—The medicinal effects of Hound's-tongue are somewhat doubtful; narcotic, anodyne, and astringent properties being attributed to it by some authors, whilst others deny its having any narcotic or anodyne influence over the human system. It was formerly included in the Materia Medica of the London and Edinburgh pharmacopœias; it is still retained by our continental neighbours, and occasionally used in catarrh, coughs, diarrhœa, dysentery,* fluor albus, gonorrhœa, and hæmorrhages. Externally, it is often successfully used in cataplasms, to soften and resolve tumours, and to all kinds of ulcers and wounds; whence Ray † unwarrantably denies its possessing any narcotic principle. It is likewise celebrated against scrofulous and strumous affections,‡ and Tragus recommends an ointment (made with the juice mixed with honey and turpentine) for old malignant and fistulous ulcers.

Both the root and the leaves are possessed of the same properties.

COMPOUND DECOCTION OF HOUND'S-TONGUE.§

Take of Dried leaves of Hound's-tongue	four ounces;
Hyssop, ...	of each one ounce;
Maidenhair, ...	
Coltsfoot, ...	
Liquorice root	two drachms;
Rice	one ounce.

Boil in six pints of water to four, and, towards the end of the process, add two ounces of clarified honey, and strain.

A useful remedy in that obstinate kind of cough called by the ancient physicians *tussis ferina*, on account of the sound of it resembling that of a wild beast. Dose, a wine-glassful every three or four hours, or, if necessary, more frequently.

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* Schreckii; Diss. de Cynoglosso, p. 19.

† Alston's Mat. Med. vol. i. p. 430.

‡ Hist. Pl. p. 490.

§ Geoffroy; Mat. Med. tom. iv. p. 395.

CX.

SEMPERVIVUM TECTORUM.

Common House-leek.

Class XI. Dodecandria.—*Order* IV. Dodecagynia.

Nat. Ord. Crassulaceæ.

Gen. Char. *Calyx* twelve-parted. *Petals* twelve. *Capsules* twelve, many-seeded.

Spec Char. Leaves ciliated. Offsets spreading. Petals entire and hairy at the margin.

SYNONYMES.

Greek	αειζωον μεγα? *Theophrastus.*
Latin......	Sedum majus vulgare. *Bauh. Pin.* 283. *Raii Syn.* 151. *Park. Theatr.* 731. Sedum majus. *Ger. Em.* 510. *Cam. Epit.* 854. *Fuchs.* 33, c. 10. Aeizoon. *Lob. Obs.* 202. Sempervivum tectorum. *Lin. Sp. Pl.* 664. *Eng. Fl.* iii. p. 350. *Eng. Bot.* t. 1320. *De Cand. Prod.* iii. p. 413. Sedum tectorum. *Scop. Carn.* ed. ii. no. 529.
French....	Joubarbe; Grande Joubarbe; Joubarbe des toits.
Italian	Sempreviva.
Spanish	Siempreviva; Siempreviva de tejados; Yerba puntera.
Portuguese.	Sempreviva.
German ...	Hauslauch; Grosser Hauslauch; Hauslaub; Hauswurz.
Dutch	Huislook; Donderbaart.
Danish....	Huuslög.
Swedish ..	Huuslök.
Bohemian ..	Netresk.
Hungarian.	Hazi zöld.
Polish	Rozchodnik wielki.
Russia	Tschcsnok dikoi.

Description.—The root is perennial, descending, elongated, somewhat branched and fibrous, crowned with several dense tufts of thick, fleshy, ovate, wedge-shaped, acute, imbricated leaves, which are smooth on both sides, ciliated at the margin, of a bright green colour, often tinged with red at the summit. The stem rises from the centre of the tuft of leaves; it is erect, hairy, about a foot in height, and clothed with narrow, alternate, sessile leaves, which become gradually smaller as they approach the summit. The flowers are arranged in a terminal, cymose corymb; the secondary branches springing from the axil of a leaf, or bractea, and supporting several shortly pedicellate flowers, disposed in a stellate form, and for the most part turned in one direction. The calyx is deeply divided into twelve, acute, persistent segments. The petals are usually twelve, lanceolate, acute, equal, withering, and of a roseate purple colour. The stamens* are usually twelve, opposite to the petals, with short subulate filaments, and globose, two-lobed anthers. The germens are for the most part twelve, ranged in a circle, oblong, pointed, compressed, terminated by short recurved styles with obtuse stigmas. At the base of each germen, and alternate with the stamens, is a small, nectariferous, wedge-shaped scale. The capsules are equal in number to the germens, one-celled, opening longitudinally, and containing numerous minute seeds, arranged in a single series along each margin of the suture. Plate 27, fig. 4, (*a*) tuft of radical leaves; (*b*) entire flower; (*c*) capsules; (*d*) stamen; (*e*) capsule, divided longitudinally; (*f*) seed.

This plant, remarkable for the beauty and singularity of its flowers, is common in most parts of Britain and other European countries, flourishing on roofs of houses, walls and rocks. It flowers in July and August.

The generic name is derived from *semper* always and *vivo*, to live, in allusion to the vivaciousness of these plants. Common

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* "The number of stamens is in reality twenty-four, of which twelve, inserted one at the base of each petal, are perfect; the rest alternating with the petals, small and abortive; some bearing anthers open longitudinally and laterally, producing instead of pollen abortive ovules!—others resemble a cuneate pointed scale, in the inside of which, upon a longitudinal receptacle, are likewise ranged abortive ovules in the same manner as the real germen: thus exhibiting the most complete transition from stamens to germens in the same individual."—*Dr. Hooker.*

House-leek has the various provincial names of *Ayegreen* and *Sengreen,* signifying evergreen; also Jupiter's-eye, Bullock's-eye, and Jupiter's-beard.

About thirty species of Sempervivum have been described: those cultivated in the green-house are chiefly natives of the Canary Islands. "The hardy kinds are well fitted for rock-work, or to grow on walls; and they are easily increased by the offsets, which are produced in great abundance. A light soil suits them best."

"In some countries House-leek is regarded with a kind of religious veneration; the simple and credulous inhabitants attributing to it the power of defending them from enchantments, and the malevolence of pretended sorcerers."* Linnæus informs us that in Smoland, House-leek is planted on the roofs of houses to preserve them from decay. It may easily be made to cover any extent of surface, by planting the offsets in common earth mixed with manure. Goats and sheep eat the foliage of this plant, other animals in general refuse it.

Qualities.—House-leek has no very perceptible odour; to the taste it is watery, cooling, and slightly acrid and styptic. The leaves are very succulent, and contain a large quantity of acidulous, rather opaque juice, which besides producing a sensation of astriction in the mouth, manifests its astringency by the dark colour it assumes when mixed with a solution of sulphate of iron. The expressed juice, filtered and inspissated by spontaneous evaporation, yields a deep yellow, tenacious, mucilaginous mass, of an acidulous, sub-saline and styptic taste. "It is observable that the filtered juice, on the addition of an equal quantity of rectified spirits of wine, forms a light, white coagulum, like cream or fine pomatum, of a weak but penetrating taste; this, freed from the fluid part and exposed to the air, almost totally exhales. From this experiment, it is concluded by some, that House-leek contains a volatile alkaline salt; but the juice coagulates in the same manner with volatile alkalies themselves, as also with fixed alkalies: acids produce no coagulation."†

Medicinal Properties and Uses.—The House-leek, which is now but indifferently valued as an internal remedy against diseases, was formerly considered a very serviceable refrigerant and astringent.

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* Flore Med. tom. iv. p. 161.

† Lewis' Materia Medica, p. 519.

Good results have been dated from its use, in dysentery,[*] and convulsive diseases.[†] Peasants, also, led no doubt by the natural credulity which prevails respecting " herbs " among that class of society, sometimes take it for the cure of intermittent fevers, and are said to derive either imaginary or positive relief. Externally applied, the House-leek has enjoyed no mean reputation. Galen celebrates it as as an application in erysipelas, shingles, and other inflammations; Dioscorides in ophthalmia, and against worms; and Pliny for weakness of the eyes. Later authorities have confirmed the main of these observations. The juice, mixed with honey, and with or without alum, is spoken of by Boyle,[‡] Rosenstein[§] and Scopoli,[||] as a beneficial remedy for infantile aphtha, and as a gargle in angina. Van Swieten[¶] applied lint, saturated with this juice, to fissures of the nipple. Ettmuller[**] and Chomel[††] used the juice, with like effect, for the parched and fissured tongue attending fevers. The leaves, bruised and enclosed in linen, have been found to relieve the pain of, and even to dissipate, hæmorrhoids.[‡‡] A coagulum, prepared by mixing spirits of wine with the juice, is recommended[§§] for freckles and sun-burns. Lastly, the bruised plant is frequently employed in rustic practice against bruises, burns, and long-standing ulcers.

The customary dose of the depurated juice is about two ounces.

SYRUP OF HOUSE-LEEK.[||||]

Take of juice of House-leek reduced to one-half by evaporation	one ounce;
White sugar	sixteen ounces.

Boil for a few minutes, and strain. Dose, from one to two ounces.

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[*] Boerh. Hort. L. B. p. 368.

[†] Pereboom, in Nov. Act. Nov. Cur. tom vii. p. 33.

[‡] Boyle's Works, vol. iv. p. 501.

[§] Rosenstein om Barnsjukd, p. 44.

[||] Scopoli; Fl. Carn. ed. i. p. 491.

[¶] Van Swieten; Comment. vol. iv. p. 644.

[**] Ettmuller; Opera. p. 661.

[††] Chomel; Usuell. P. iii. p. 126.

[‡‡] Scopoli; Lib cit.

[§§] Crell. Neueste Entdeck, P. ix. p. 109.

[||||] Pharmacopœia Wirtembergica.

CXI.

HYSSOPUS OFFICINALIS.

Common Hyssop.

Class XIV. Didynamia.—*Order* I. Gymnospermia.

Nat. Ord. Labiatæ.

Gen. Char. *Calyx* five-cleft. *Corolla* with the upper lip erect, semi-bifid; lower lip three-parted, with the intermediate segment subcrenate. *Stamens* straight, distant.

Spec. Char. Flowers whorled, racemose, unilateral. Calycine teeth erect. Leaves lanceolate.

SYNONYMES.

Greek......	*υσσωπος ?*
Latin......	Hyssopus officinarum cærulea seu spicata. *Bauh. Pin.* 217.
	Hyssopus arabum. *Ger. Em.* 579.
	Hyssopus coronata sive comosa Clusii. *Park. Theatr.* 2.
	Hyssopus officinalis. *Lin. Sp. Pl.* 796. *Jacq. Austr.* t. 254.
French....	Hysope; Hysope officinal.
Italian	Isopo; Issopo.
Spanish....	Hisopo.
Portuguese.	Hyssopo.
German....	Isopp.
Dutch	Hysop; Yzoop.
Dan. & Swe.	Isop.
Polish.....	Isopek.
Bohemian..	Yzop.
Arabic	Zufe; Ayzof.

Description.—The root is perennial, ligneous, about the thickness of the finger, somewhat branched, and fibrous. The stems, several from the same root, are erect, shrubby, obsoletely quadrangular, about two feet in height, with opposite, elongated branches. The leaves are opposite, spreading, sub-sessile, long, lanceolate, acute, entire, minutely ciliated at the margin, sprinkled on both sides with small glandular dots, and of a deep green colour. The flowers are nearly sessile, for the most part turned in one direction, and disposed in whorls in the axils of the upper leaves, forming erect, elongated, leafy, spike-like racemes. The calyx is tubular, funnel-shaped, slightly hairy within, striated, and divided at the limb into five, nearly equal, acute teeth. The corolla is of a blue colour, bilabiate, with a slender tube; the upper lip small, erect, rounded, emarginate; lower lip divided into three segments, of which the intermediate one is large, obcordate, spreading, and somewhat crenated. The stamens are didynamous, longer than the corolla, with subulate spreading filaments, tipped with simple linear anthers. The germen is four-parted, and from its centre rises a slender, tubular, violet-coloured style, a little longer than the stamens and terminated by a bifid stigma. The fruit consists of four nuts, enclosed in the calyx, each containing a single globose seed. Plate 27, fig. 1, (*a*) entire flower, magnified; (*b*) pistil; (*c*) fruit; (*d*) nut of the fruit, magnified.

Hyssop was first cultivated in this country about the year 1548, and is now well known in gardens, being valued not less for its beauty and fragrance when in flower, than for its medicinal qualities. It grows wild in many parts of middle and southern Europe, especially in mountainous situations, but it is probably of Asiatic origin. It flowers from June to August.

Much diversity of opinion has prevailed as to whether this plant is the *esob* of the Hebrew writings, and the *υσσωπος* of the Greeks. Dioscorides has left no description of the *υσσωπος*, apparently considering that it was sufficiently well known; but the effects attributed to it, do not correspond with those of our Hyssop, which is more likely to be the Hyssop spoken of in the Scriptures, as used in the purification enjoined by the Levitical law, and consequently, to the "Hyssop springing out of the wall," alluded to by Solomon. Hasselquist, however, conjectures, that this plant was a minute kind of moss (*Gymnostoma truncatulatum*), which he observed growing in vast abundance upon the walls of Jerusalem. If this supposition be correct, the Hyssop spoken of by Solomon could scarcely be the plant mentioned in other parts of the Sacred

Writings. We read (Exod. xii. 22; Numb. xix. 6) that a *bunch of hyssop* was ordered to be dipped in the blood; and John xix. 29, "they filled a sponge and put it upon hyssop," which certainly could not refer to a minute and slender moss. Further, in the purification of lepers, a *bunch of hyssop with branches of cedar* and red wool was dipped in blood and sprinkled on the leper. It is not improbable, then, that Solomon, when he "spake of the cedar which is in Lebanon, to the hyssop which groweth out of the wall" (1 Kings iv. 33), made especial mention of those plants which were connected with the religious history and ceremonial observances of the Jewish people.

QUALITIES.—This plant has a very agreeable, fragrant odour, and a warm, aromatic, bitterish taste. According to Bergius, the recent herb, when masticated, affects the tongue and fauces with a sensation of heat, like that produced by camphor, but more feeble. The watery infusion of the flowering tops is of a reddish saffron colour, of a slightly fragrant smell and rather bitter taste, and is rendered brown by the addition of sulphate of iron, which produces a copious dark grey precipitate. The distilled water of the recent plant is strongly impregnated with its agreeable flavour, and an essential oil * rises to the surface, of a yellowish colour, fragrant odour, and very pungent taste. The aqueous extract is bitter, and somewhat acrid and saline. Alcohol extracts its active principle rather more completely than water, and the spirituous extract is bitterish, very warm, and pungent, like camphor.

MEDICINAL PROPERTIES AND USES.—If we examine attentively the effects of Hyssop on the animal economy, we shall readily discover its properties. It manifestly excites, in a slight and sudden manner, the different functions of physical life; on which account we freely grant it stimulating, diuretic, sudorific, and resolutive properties. As a tonic it scarcely merits any attention. It was formerly particularly recommended for diseases of the chest, especially cartarrh, and asthma,† with the view of promoting expectoration; but its stimulating properties render it a doubtful remedy in these complaints.

The infusion of the leaves, in the form of tea, augments the action of the stomach and intestines, and is frequently employed with that view by aged or feeble persons. Rosenstein[*] found it destructive to worms in children; and, in Sweden, it would appear to be a common vermifuge. The same has also been found serviceable at the commencement of the exanthemata of febrile habits, and where the eruption is either suddenly checked or receding.[†]

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* From 20 lbs. of the herb, gathered just before flowering, Baume obtained six drachms of essential oil; while Lewis states, that 6 lbs. of the leaves yield about an ounce of oil.

† Murray; Appar. Med. tom. ii. p. 164.

Externally, Hyssop has obtained great reputation for removing the blackness consequent on a blow, especially black eyes, and even for discussing a blood-shot eye. The method of using it is, by taking either the fresh or dried plant tied up in a piece of linen, and immersing it in boiling water;[‡] or, what is better, wine,[§] then apply it hot and moist to the part.

An infusion, distilled water, a grateful aromatic syrup, and a fragrant pungent oil, are directed in some of the continental pharmacopœias.

INFUSION OF HYSSOP.[||]

Take of Leaves of Hyssop..........	two drachms and a half;
Grated Liquorice..........	two drachms;
Boiling water	two pints.

Infuse in a loosely-covered vessel, and strain.

DISTILLED WATER OF HYSSOP.[¶]

Take of fresh herb of Hyssop	one part;
Water....................	twelve parts.

Distil four parts. Dose, two or thee ounces.

SYRUP OF HYSSOP.[**]

Take of dried tops of Hyssop	one ounce;
Distilled water of Hyssop	two pints.

Digest in a water-bath for two hours, in a covered vessel; strain, filter, and add to the infusion.

White Sugar............................	double the quantity.

Melt in a water-bath in a covered vessel.

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[*] Rosenstein Barnsjukd, p. 358.

[†] Flore Medicale, tom. iv. p. 118.

[‡] Riolan; Curat. morb. ocul. p. 876.

[||] S. Pauli; Quadrip. bot. p. 389.

[§] Form. Pharm. hop. mil. de France, 1821.

[¶] Pharmacopœia Austriaca, 1820.

[**] Pharmacopœia Gallica, 1818.

CXII.

HEDERA HELIX.

Common Ivy.

Class V. PENTANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. CAPRIFOLIACEÆ.

GEN. CHAR. *Calyx* of five teeth. *Petals* five, broadest at the base. *Style* simple. *Berry* one-celled, three to five-seeded, crowned by the calyx.

SPEC. CHAR. Stem climbing by means of lateral fibres. Leaves coriaceous, shining, with five angular lobes, the uppermost ovate, entire. Umbels erect.

SYNONYMES.

Greek	κισσος; *Dioscorides.* κιττος; *Theophrastus.*
Latin......	Hedera arborea. *Bauh. Pin.* 305. Hedera corymbosa. *Ger. Em.* 858. Hedera communis, major et minor. *Raii Syn.* 459. Hedera nigra. *Fuchs.* 414. Hedera Helix. *Lin. Sp. Pl.* 292. *Eng. Fl.* i. p. 334. *Eng. Bot.* t. 1267.
French....	Lierre; Lierre grimpant.
Italian....	Edera; Ellera.
Spanish....	Yedra.
Portuguese.	Yera; Eira.
German....	Epheu; Wintergrün; Baumwinde; Eppich.
Dutch.....	Klimop; Klyf; Boomveil.
Danish....	Vedbende; Vintergront.
Swedish....	Murgrœn.
Bohemian..	Brectan.
Hungarian.	Fai-borostyan.
Polish	Bluszcz.
Russ......	Bljustsch.

Description.—Ivy is an evergreen climbing shrub, throwing out roots from the side by which it comes in contact with other substances: the branches are tortuous and flexible; the wood is soft, light, and porous; when the plant is young and creeps upon the ground, the leaves are lanceolate and entire; at a more advanced period, when it climbs upon trees, &c., they become cordate, with three or five lobes; and subsequently, when it has arrived at the top of any support, the branches shorten, and form into large bushy heads, and the leaves become ovate and undivided;* all the leaves are petiolate, coriaceous, thick, shining, deep green, and are often veined with whitish lines. The flowers are small, pale green, and collected into spherical, simple umbels, at the summit of the branches; the pedicels generally covered with stellate pubescence. The calyx is very small, and five-toothed. The five petals are oblong, acute, reflexed, and of a light yellowish-green colour. The stamens are five, alternate with the petals, erect, with subulate filaments inserted beneath a large disk, which crowns the germen; the anthers are cleft at the base. The germen is inferior, turbinate, crowned by a very short style and simple stigma. The fruit is a smooth, globose, purplish-black, rather succulent berry, about the size of a pea, crowned by the remains of the calyx, one-celled, three to five seeded. The seeds are large, oblong, angular, convex on the outer, angular on the inner side. Plate 28, fig. 3, (*a*) lower leaf; (*b*) entire flower; (*c*) calyx and pistil; (*d*) fruit or berry; (*e*) seed.

Ivy is a native of Europe, from Italy to the confines of Lapland. It is very frequent in Britain, in woods, on the trunks of trees, on the dismantled walls of ruined buildings, and on rocks. It flowers from the end of September to November; and its berries, which increase in size during winter, ripen in March and April.

Several different etymologies of the word *Hedera* have been given, as from *hæreo*, to adhere, and *edo*, to eat; but the most probable, is from the Celtic *hedra*, a *cord*. The specific name is derived from ειλεω, to *encompass*, in allusion to the twining stems. The Celtic word, *iw*, *green*, is probably the parent of our word Ivy, as it is likewise of Yew.

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* These different states of the plant were regarded by some of the old botanists as constituting so many distinct species; hence, we have *Hedera humi repens*, *Hedera major sterilis*, and *Hedera arborea*. Linnæus poetically represents them under the titles of *infancy*, *childhood*, and *manhood*.

About fifty species of Hedera have been described. The Irish Ivy of the gardens, distinguished by its rapid growth, luxuriant foliage and red berries, is generally considered a variety of the Common Ivy, and is named *H. Canariensis,* or *H. vegeta*; it is a native of the Canary Islands.

Ivy has enjoyed much poetical renown from the days of "hoar antiquity." It has been, perhaps, less celebrated in the recesses of its native woods, from being generally associated with the departed grandeur of noble castles and splendid abbeys, clothing their mouldering walls with a mantle of perpetual verdure. By the ancients, Ivy was dedicated to Bacchus; the statues of the god were crowned with a wreath of this plant, and his frantic worshippers, especially at their annual festivals the *διονυσία*, or *οργια*, decorated themselves with garlands of Ivy; they also introduced it to their banquets, and had it carved on their goblets. Homer represents his heroes as drinking from a cup made of Ivy-wood. (*κισσυβιον.*) Probably, these customs were owing to the opinion, early and for a long period entertained, that this plant was an antidote to the effects of the juice of the grape; and, even in the present day, we find that in some parts of the south of Europe, Ivy is suspended at the entrance of taverns and *cabarets,* as it was formerly, if it is not at present, in this country. Thus Wilson* tells us; "by the signe wee understand the thing signified; as by an iuie garlad, we judge there is wine to sel." Ivy formed the poet's crown; Horace refers to it in his ode to Mæcenas:

> "Me doctarum hederæ prœmia frontium
> Diis miscent superis."†

And Virgil in his seventh Eclogue:

> "Pastores hedera crescentem ornate poetam Arcades."

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* Arte of Rhetorique, fol. 117.

† See also lib. i. ode xxv. v. 17; lib. iv. ode xi.; Epod. ode xv. Virgil more than once alludes to it in connexion with the adjective pallens, intending, as some suppose, the white-veined Ivy; the word pallens, however, does not always signify *pale*; e. g. pallentes umbras.

> " ———— pocula ponam
> Fagina, cælatum divini opus Alcimedontis:
> Lenta quibus torno facili superaddita vitis
> Diffusos hederâ vestit pallente corymbos."
> *Ecl.* iii. v. 37.

Many beautiful allusions to this plant may be found in the works of our own poets, which our limits will not allow us to transcribe.

QUALITIES AND GENERAL USES.—The roots of Ivy are used by leather-cutters, to whet their knives upon. The wood is sometimes employed by turners; it is soft and porous, and vessels made of it may be turned so thin as to transmit liquors; hence, with the ancients, according to Pliny, it had the reputation of separating wine and water when the two were mixed together, viz., by retaining the wine, and allowing the water to filter through its pores. Bohmer states, that both the leaves and branches are useful in tanning. A decoction of the leaves has been used to dye the hair, and to remove stains caused by ink or fruit. The resin which exudes from the old branches is employed in the Arts, in the composition of certain varnishes, and is said to attract fish. As a cultivated plant Ivy, is useful for covering naked walls or trees, and sides of houses, or for training into fanciful shapes, as of human figures, &c., on skeletons of wire-work, or trained up a stake so as to form a standard. The flowers, which appear late in the season, are much resorted to by various insects, and the berries are food for wood-pigeons, blackbirds, thrushes, &c., in the spring. Sheep are not averse to the leaves, especially in severe weather; horses also will eat them, but they are refused by cows and goats.

The leaves are inodorous, but nauseous, slightly bitter, and austere to the taste. The recent berries are somewhat acid; when dried, they become bitterish and slightly acrid. The resin which exudes from the old stems, either spontaneously or by incision, is met with in commerce in small irregular compact masses of a brown colour, streaked with red; it is friable, gritty, and of a slight resinous flavour; it is almost inodorous; it burns, however, with a yellowish-white flame, and diffuses a fragrant odour. It is not dissolved by the saliva when masticated, and is insoluble in the fixed and volatile oils, to which, however, it gives a yellow colouring matter, and is only partially soluble in alcohol;* hence, it would appear, that this substance is not a pure resin. An aqueous infusion of the dried berries or leaves is of a reddish colour, which is not much affected by sulphate of iron; they also yield, by distillation, a very small quantity of volatile oil, and when treated with alcohol, an abundant resinous extract.

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* Bergius; Mat. Med. tom. i. p. 160.

Medicinal Properties and Uses.—The leaves, berries, and resin of the Ivy have been employed in medicine. The leaves are rarely administered internally, except, probably, in the atrophy of infants, but their immediate effects are not stated. Externally, they are sometimes applied by the common people of France,* and of our own country,† for drawing and healing running sores, and keeping issues open; and in Lapland‡ they are used with the like view. In decoction, either vinous or aqueous, they are more or less detersive; the former somewhat powerfully so, and applied to indolent and fungous ulcers; the latter, to scald heads, itch, and other eruptive diseases. The berries were supposed by the ancients to have purgative§ and emetic qualities. Later writers have recommended them as alexipharmic and sudorific. Boyle‖ gave them in large doses to induce perspiration; and during the London plague, they were said to be used with good success.¶ Palmarius** and Kircherus†† have likewise recorded their efficacy in plague and other infectious diseases.

The resin, formerly directed in the Edinburgh Pharmacopœia under the name of *gummi hederæ*, possesses corroborant, astringent, emmenagogue and antispasmodic virtues: Stahl‡‡ gave it in suppression of the menses and other atonic diseases; but it is now rarely employed, except as an ingredient in some plasters.

When given internally, the ordinary dose is about a scruple of the leaves and berries, or from two to six ounces of the following infusion:

INFUSION OF IVY.

Take of Ivy-leaves or berries....one drachm;
Boiling water ....one pint.

Macerate, and when cold strain it.

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* Chomel; Usuell. tom. ii. p. 378.

† Lewis; Mat. Med. p. 299.

‡ Linn. Wästgöta resa, p. 201.

§ An extract made from them was called by Quercetanus "Extractum purgans." *Duchesne* (*Quercetanus*), *Pharmac. dogmat. restitut. cap.* 26.

‖ Usefulness of Nat. Phil. in Works, i. p. 507.

¶ Hodges, who wrote in 1671, gives the following as the recipe which was found so useful: "Powder of Ivy-berries, one drachm; vinegar of elder, two drachms; white wine, three drachms." *Pestis Nuperæ apud Popul. Lond. grass. nar. Hist. p.* 181.

** Palm. in Tract. de Peste et Morbis contag. p. 453.

†† Kirch. in Scrutinio Pestis, p. 317.

‡‡ Murray; App. Med. tom. i. p. 441.

CXIII.

JUNIPERUS COMMUNIS.

Common Juniper.

Class XXII. DIŒCIA.—*Order* VIII. MONADELPHIA.

Nat. Ord. CONIFERÆ.

GEN. CHAR. Male flowers: *Scales* of the *catkin* subpeltate. *Perianth* wanting. *Stamens* four to eight, one-celled. Female flowers: *Scales* of the *catkin* few, ultimately united, fleshy, and surrounding the three-seeded berry.

SPEC. CHAR. Leaves three in a whorl, spreading or imbricated, longer than the berry.

SYNONYMES.

Greek......	*αρκευθος.*
Latin......	Juniperus vulgaris. *Bauh. Pin.* 488. *Raii Syn.* 444. *Park. Theatr.* 1029. Juniperus. *Ger. Em.* 1372. Juniperus communis. *Lin. Sp. Pl.* 1470. *Eng. Fl.* iv. 251. *Eng. Bot.* t. 1100.
French	Genevrier; Genevrier commun.
Italian	Ginepro.
Spanish.....	Enebro.
Portuguese.	Zimbro.
German....	Wachholder.
Dutch.....	Genever-boom.
Danish....	Ene; Enebœr.
Swedish....	En; Enbuske; Enebœrstrœd.
Polish.....	Jalowiek.
Russ......	Moschewelnik.

DESCRIPTION.—Juniper is a rigid evergreen shrub, varying in height from three to fifteen feet, much branched, with diffuse irregular tufted branches; the wood is hard, and of a reddish colour, covered with a rough reddish-brown bark. The leaves are very numerous, arranged in threes, sessile, linear, mucronate, pungent, channelled, somewhat glaucous above, convex, and deep-green beneath. The flowers are diœcious, or occasionally monœcious, small, and axillary. The male flowers are disposed in small yellowish ovoid catkins, each with three rows of pedicellate, whorled, imbricated, sub-peltate scales, three in each whorl, and a terminal one; at the base of which are three or four nearly sessile stamens, with the filaments united at the base; the anthers one-celled, and containing much pollen. The female flowers are disposed in globose catkins, consisting of about six imbricated permanent scales, each with a roundish germen, and three very short styles, terminated by simple stigmas. The fruit is a small globose berry, of a glaucous bluish-black colour, the succulent outside composed of the inner scales of the flower, which become fleshy and coalesce, subtended at the base by the outer tuberculous scales, and including three oblong bony seeds or nuts, which are convex, and channelled externally. Plate 28, fig. 1 (*a*) part of a branch of the male plant; (*b*) catkin, or cone of male flowers; (*c*) one of the female flowers magnified; (*d*) fruit cut transversely to show the seeds or nuts; (*e*) nut,

This homely-looking shrub is frequent on our heaths and commons, particularly in dry, chalky, and hilly situations, and is sometimes found in woods. It is a native of Europe, from Spain to Lapland, and is also indigenous to Japan. It flowers in May: the berries are not ripe before the second year. The generic and vernacular names are, probably, derived from the Celtic *jeneprus*, signifying *rude*, or *rough*.

Sprengel enumerates twenty-two species of Juniper, none of which are indigenous to Britain, except the subject of this article, and the *J. nana*, a low procumbent shrub, abounding in the mountains of Scotland and Ireland, distinguished from *J. communis* by its prostrate stems, more curved leaves, and larger oval berries; it is scarcely, however, entitled to rank as a species. Common Juniper varies much in size and habit; by the sides of hills, in favourable soils, it sometimes attains the height of eight or ten feet, but on the tops of mountains, and in moist valleys, it is a dwarfish tufted shrub. *J. Sabina*, or Common Savine, is a native of South Europe, and is sometimes cultivated in our gardens, where it seldom flowers. The leaves and tops afford the *savine* of the shops, well known for its stimulant and emmenagogue properties. *J. Barbadiensis* and *J. Bermudiana* are moderately large trees, yielding the timber known by the name of Bermudas' Cedar. *J. Virginiana*, a native of Jamaica and North America, also affords a timber valued for cabinet-work, as its odour is obnoxious to most insects. The gum-resin, called olibanum, famous for its employment as incense in religious worship, has been generally considered the produce of *Juniperus Lycia*; some modern authorities, however, assert that it is not obtained from this plant, but from the *Boswellia serrata*, or, with Lamarck, from a species of *Amyris*.

QUALITIES AND GENERAL USES.—Juniper is valuable for many of its economical uses. In shrubberies it is often planted to group with cypresses, American cedars, &c. It is easily transplanted, and bears cropping. Grass will not grow beneath it, but it is said that the *avena pratensis* will destroy it! Thrushes, grouse, and other birds feed upon the fruit, and several insects are supported by the foliage. The young shoots are eaten by horses, sheep, and goats. The wood is hard, and very durable,* and is used for making cups, cabinets, &c., and also for marquetry and veneering; it affords excellent charcoal, which is so tenacious of heat,† that the old chemists asserted that live embers had been found in the ashes after having been covered for twelve months. Ropes may be made of the bark. A gum-resin exudes spontaneously from the old stems, which is called Sandarach,‡ and in its powdered form is known under the name of pounce, which is used to give consistence to paper, and to prevent the ink from sinking in parts which have been erased. Dissolved in spirits of wine, sandarach also affords a brilliant varnish, which is much employed in the Arts.

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* "Beams of Juniper-wood were used in building the Temple of Diana, at Saguntum."—*Raii Hist.* 1412. Probaby this wood was the produce of the *J. Oxycedrus*, or of some species of *Thuja*. The timber of the tree that produces Sandarach, is considered by the Turks indestructible, and is employed by them for the ceilings and floors of their mosques.

† There is an allusion to this in Psalm cxx. v. 4.

‡ This substance is chiefly procured from the plants of warm climates; a finer sort is obtained by incisions in the trunk of *J. Oxycedrus*, and, probably, from other species of Juniper. Desfontaines (Fl. Atlas ii. p. 333) states, the Sandarach generally met with in commerce is the produce of the *Thuja articulata*. It is chiefly brought from Morocco, and other parts of North Africa.

To Juniper-berries,* the well-known spirit called Hollands,† owes its peculiar flavour: "Bruised and macerated in water, they yield, by fermentation, a pleasant and wholesome drink, which is much used, under the name of *genevrette*, by the country-people in many parts of France."‡ They are also employed as a condiment in Germany, especially for imparting their flavour to *sauer-kraut*; infused in alcohol, they form an excellent ratafia, and they enter into several liqueurs and confections. Scheffer and Mundius assert, that the Laplanders make a decoction of these berries, which they drink as tea or coffee. This Linnæus§ contradicts; but, he adds, in several provinces of Sweden, the peasantry prepare a very agreeable fermented liquor with the berries, which, however, they drink cold, and never hot, like tea or coffee. The oil distilled from the berries, mixed with oil of nuts, makes an excellent varnish for paintings, wood-work, and for preserving iron from rust.

The recent tops have a fragrant odour, and a balsamic, bitterish taste. The berries have an aromatic odour, and a warm, pungent, sweetish taste, which, if they are long chewed, or previously well bruised, is followed by a considerable bitterness.|| Both water and alcohol extract their active properties: distilled with water, they yield a yellowish essential oil, subacrid, warm, and very pungent, smelling powerfully of the fruit itself. The quantity of volatile

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* It is also called Geneva, a corruption of *genevrier*, the French name for Juniper. The superior flavour of foreign Hollands is said to be owing to the Juniper-berries being distilled with the malt, instead of the distilled oil being added subsequently. English gin ought to be prepared in the same manner; but oil of turpentine is usually substituted.

† The greater quantity of the berries are brought from Holland, Germany, and Italy. The Italian berries are less shrivelled, and have a more beautiful bloom on them, but are less rich in volatile oil than the others.

‡ Flore Medicale, tom. iv. p. 42.

§ Flora Lapponica, ed. J. E. Smith, p. 312.

|| Lewis's Mat. Med. p. 323. He adds, "The sweetness appears to reside in the juice, or soft pulpy part of the berry; the bitterness in the seeds; and the aromatic flavour in oily vesicles spread throughout the substance both of the pulp and of the seeds, and distinguishable even by the eye. Hence, when the berries are pounded, so as thoroughly to bruise the seeds, a much greater bitterness is produced in the water or alcohol, which serves as a menstruum."

oil obtained varies from one to three and four per cent.* The spirituous tincture, when inspissated, consists of two distinct substances; one oily and sweet, the other tenacious, resinous, and aromatic. Tromsdorf analyzed the fruit, and found it to contain volatile oil, wax, resin, saccharine matter, mucus, acetate and malate of lime, with some other vegetable salts.

Medicinal Properties and Uses.—The wood of the Juniper, either of the stem or root, is diuretic and sudorific, and has been very favourably mentioned for a variety of complaints. In decoction or infusion, it has been beneficially employed in gout, rheumatism, catarrhs of the lungs and bladder, obstructions of the liver, amenorrhœa, ozæna, and scurvy. Monro† employed a bath (prepared with wood) very beneficially, in the treatment of malignant small-pox. Rosenstein‡ asserts, that the strong decoction soon clears the hands in scabies. Friction by flannel saturated with the decoction, has proved a good palliative for atonic gout, chronic rheumatism, and ischiatic pains. Formerly, it was highly praised, particularly by Brassavola,§ Ettmuller,‖ and Scopoli,¶ against the venereal disease, attributing to it antisyphilitic powers equal to guaiacum, sassafras, sarsaparilla, and the like; but in the present day, it is rarely, if ever, given for this complaint. The tops of Juniper have also been given for the same disorders as the wood; and both, when reduced to ashes, have been advocated** in dropsy, but the benefits recorded, are by no means confirmed by subsequent experience. The resin (sandarach) is excitant, and with this view it may be applied, in powder, to promote the healing of wounds, and to cleanse unhealthy ulcers. It is often added to gargles against scorbutic swellings of the gums, an to injections for the urethra and chronic blennorrhœa. Internally, it has been given in chronic catarrhs, chronic diarrhœas, and for passive hæmorrhages, hut its reputed success is not always constant.

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* Probably in consequence of the greater or less maturity of the fruit. In the *Journal de Pharmacie*, 1827, p. 215, it is stated, that before maturity the berries contain an essential oil; when ripe, turpentine, and when dry on the tree, merely a resin.

† Account of the Inoculation of Small-pox in Scotland, p. 9.

‡ Rosenstein; Bskd. p. 468.

§ Respons. ad quest. Fontanæ in Vogel. M. m. p. 271.

‖ Opera. Med. p. 591.

¶ Diss. Obs. pract. de radicis frut. Junip. decocto.

** Darel; Socken-Apot, p. 46.

All the medicinal properties of the Juniper may be said to be concentrated in the berries, which, in addition to the qualities already mentioned, are stomachic, diaphoretic, and diuretic. Their carminative action on the stomach is manifested by their power of relieving dyspepsia, increasing the appetite, and promoting digestion. The impression they exert upon the stomach is extended to other organs, especially the kidneys. Of their efficacy in many hydropical affections, we have various relations by physicians of great authority, as Du Verney, Hoffman, Boerhaave, and his illustrious commentator, Baron Von Swieten, &c.;[*] but, notwithstanding the eulogia of some, and the disparagement of others, they form a valuable anti-hydropic remedy, and more particularly in combination with other diuretics. The benefits derived from their use in atony of the primæ viæ, chronic pulmonary catarrhs, catarrhs of the vagina or urethral canal, atonic gout and rheumatism, hypochondriasis, scurvy, leucorrhœa, and many other disorders, are attested by different writers. Some observers[†] have declared them to be singularly useful in expelling gravel and calculi. They are certainly an excellent remedy in diseases of the kidneys, bringing away both gravel and mucus in great abundance, whenever they exist. On this point, however, Geoffroy[‡] observes, that when given to strong or very irritable persons, they may often induce renal pains and bloody urine. They have been successfully given in intermittents,[§] and by Terzelius[||] were commended in leprosy.

There have been a variety of preparations of Juniper employed in medicine, but principally the *Rob*, or inspissated juice, a simple and a compound spirit, an essence, and essential oil, besides the simple infusion or decoction. By some, the berries are preferred to be eaten to the number of fifteen to twenty at a time, or the dried berries in powder to the dose of a drachm. The oil of Juniper, on which, indeed, the active principle of the berries is said to depend, is particularly adapted for colic, and to promote menstruation: the dose is from four to six or eight drops on a lump of sugar. The resin may be given in powder from twenty to sixty grains; and an extract, prepared from the wood or tops, from half a drachm to two drachms.

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[*] Woodville; Med. Bot. i. p. 15. Also, Murray; App. Med. t. i. p. 49.

[†] Frankenfeel, Spiess, Lange, &c.

[‡] Geoffroy; Mat. Med. tom. iii. p. 635.

[§] Flore Medicale iv. p. 40.

[||] Terz. in Medic. Diastat. p. 169.

INFUSION OF JUNIPER BERRIES.*

Take of	Juniper-berries, bruised	one ounce ;
	Boiling water............	one pint.

Digest in a covered vessel for half-an-hour, and strain.—Dose, a cupful every three or four hours.

DECOCTION OF JUNIPER-WOOD.

Take of	Raspings of Juniper-wood	half an ounce ;
	Water	one pint.

Boil to one-half and strain. Dose, a cupful every four hours.

COMPOUND SPIRIT OF JUNIPER.†

Take of	Juniper-berries, bruised....	fifteen ounces ;
	Caraway-seeds, bruised	two ounces ;
	Fennel-seeds, bruised	two ounces ;
	Proof spirit	one gallon ;
	Water	two pints.

Mix, and then distil one gallon with a gentle heat.—Dose, from two to four drachms.

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* Pharmacopœia Castrensis Borussica, 1823.

† Pharmacopœia Londinensis, 1836.

CXIV.

ALCHEMILLA VULGARIS.

Common Lady's Mantle.

Class IV. Tetrandria.—*Order* I. Monogynia.

Nat. Ord. Rosaceæ.

Gen. Char. *Perianth* inferior, eight-cleft; the alternate segments smallest. *Style* from the base of the germen. *Fruit* one or two seeded, surrounded by the persistent perianth.

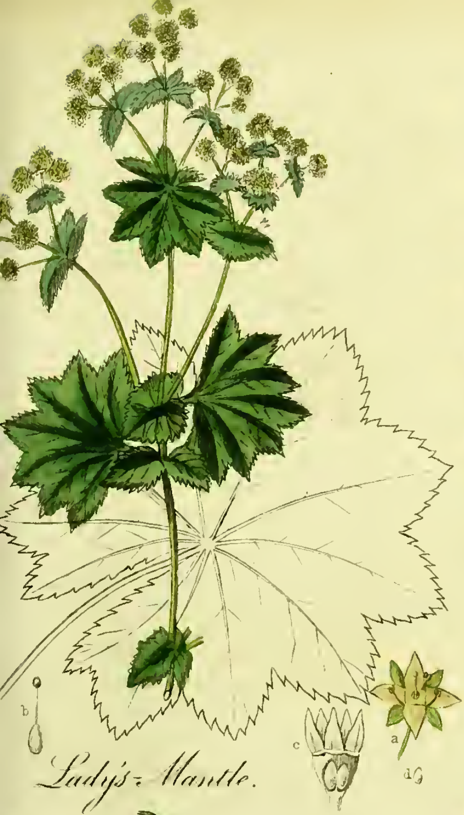
Spec. Char. Leaves reniform, plaited, many-lobed, serrated.

SYNONYMES.

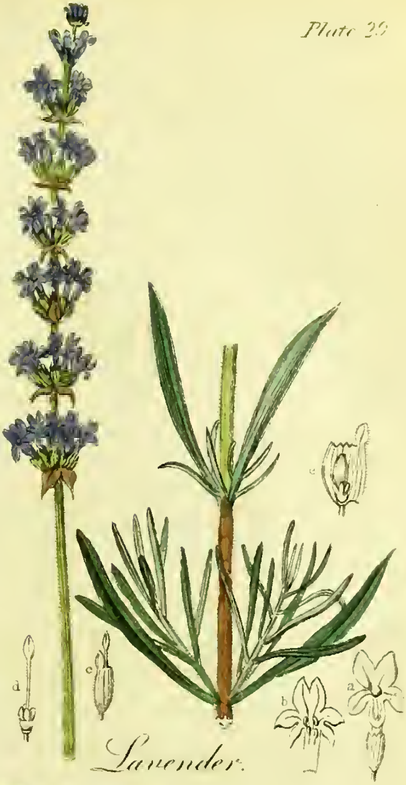
Greek	*λεοντοποδιον.*
Latin	Alchemilla vulgaris. *Bauh. Pin.* 319. Alchimilla. *Raii Syn.* 158. *Ger. Em.* 949. Alchymilla major vulgaris. *Park. Theatr.* 538. Pes Leonis. *Fuchs.* 584, c. 234. Alchemilla vulgaris. *Lin. Sp. Pl.* 178. *Eng. Fl.* i. p. 223. *Eng. Bot.* t. 597.
French	Alchimille; Pied de lion; Manteau des dames.
Italian	Alchimilla; Piede di leone.
Spanish....	Alquimila; Pie de leon comun.
Portuguese.	Alchimilla.
German....	Sinau; Frauenmantel; Löwenfuss.
Dutch	Zinauw; Leuwenklaauw; Onze vrouwe mantel.
Swedish ...	Dragblad.

Description.—The root is perennial, oblique, fibrillose, ligneous; dark brown externally, and marked with the annular remains of former leaves. The stems are more or less numerous, erect, slender, cylindrical, leafy, naked, or clothed with hairs, and

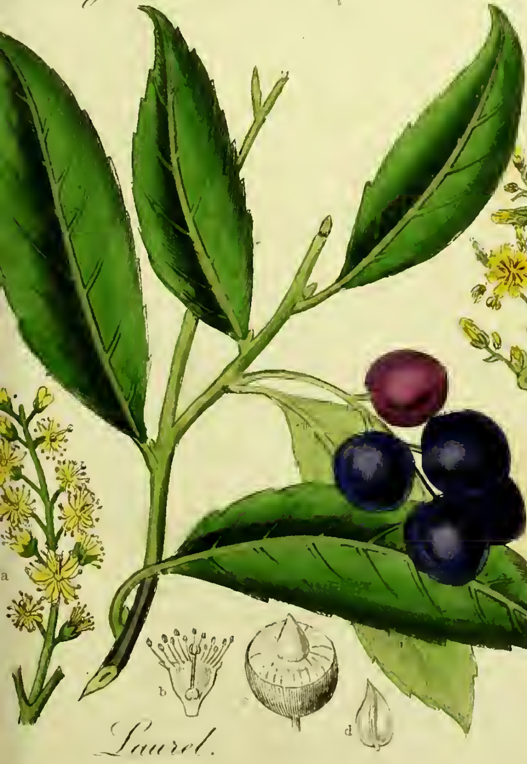
Plate 29



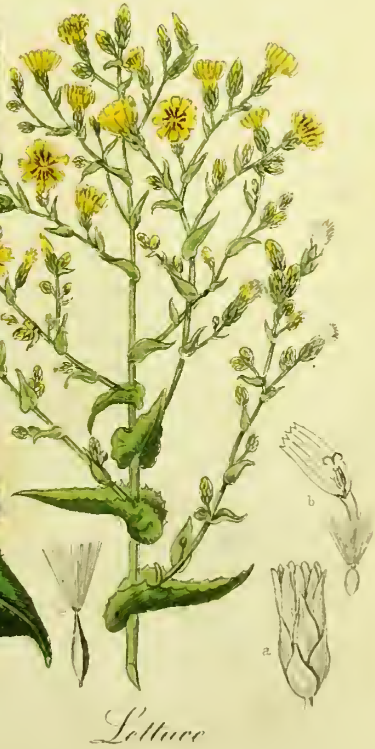
Lady's-Mantle.



Lavender.



Laurel.



Lettuce.

attain the height of a foot or more. The leaves are alternate; the radical ones large, on long petioles; the cauline ones smaller, with petioles, which become gradually shorter towards the top of the stem; they are orbicular-reniform, concave, plaited, with from six to nine serrated lobes, nerved, veiny, smooth, or more or less pubescent, subtended at the base by stipulæ, which, on the upper part of the stem, are connate, toothed, and spreading horizontally. The flowers are small, numerous, yellowish-green, and disposed in dichotomous corymbs, at the summit of the stem and branches. The perianth is inferior, monophyllous, persistent, with a contracted tube, and an eight-parted limb, the alternate and outer segments being the smallest. The four stamens have short subulate filaments inserted into the perianth, and roundish anthers. The germen is solitary (sometimes twin), oblong, with a short, lateral style, tipped with a capitate stigma. The fruit consists of one or two oblong, compressed, one-seeded nuts, or carpels, enclosed in the indurated tube of the calyx. Plate 29, fig. 1, (*a*) entire flower magnified; (*b*) pistil; (*c*) calyx cut vertically to show the nuts.

Common Lady's Mantle is a native of Europe and Siberia, occurring abundantly in alpine woods and pastures, and in similar situations in Great Britain. It flowers from June to August.

This plant was supposed by Linnæus to derive its name, *Alchemilla,* from the alchemists, who considered the dew on its leaves to possess extraordinary properties. Hence, like the term alchemy, it comes from the Arabic *àlkémelych.* It is called Lady's Mantle, the mantle of Our Lady (the Virgin Mary), in allusion to the shape and elegant plaitings of the leaves; these have also suggested the name Lion's-foot. In different parts of the country it is called Great Sanicle, and Bear's-foot.

Two other species of Lady's Mantle are found wild in this country. Alpine Lady's Mantle (*A. alpina*), a most elegant plant, somewhat resembling the above, but distinguished by its digitate leaves, which are beautifully silky underneath; it grows on mountains in the north. The Field Lady's Mantle,* or Parsley Piert (*A. Aphanes*), is a common annual weed in fields and gravelly soils; the stems are frequently prostrate on the ground, the leaves small and trifid, and the stamens seldom more than one or two.

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* This plant is, or has been, kept in the herb-shops, under the name of Parsley Breakstone. Gerard tells us "it vehemently and speedily moues urine, and by some is kept in pickle and eaten as a sallad."

Qualities and general Uses.—This plant, though refused by swine and seldom touched by cows, is relished by horses, goats, and sheep ; it has, therefore, been recommended for cultivation. According to some writers, the whole plant may be advantageously used in tanning.

The recent root, when cut, has a whitish colour, an unpleasant odour, and a styptic taste. The herbaceous part is somewhat austere to the taste, but is nearly destitute of odour. Its virtues are obtained by decoction and infusion, both in water and spirit.

The aqueous infusion of the leaves is of a transparent dark-brown hue; it reddens turnsol, but scarcely effects litmus paper; it changes to a blueish-black by the addition of sulphate of iron, and a precipitate is slowly produced. "The aqueous extract has the odour of honey, and an acid austere taste; it is much more abundant than the alcoholic extract, which exhales a balsamic odour."*

Medicinal Properties and Uses.—This plant has received extravagant praises for its efficacy in hemorrhages, alvine fluxes, fluor albus, diabetes, dysentery, wounds of every kind,† "et virginitatem restituere."‡ Linnæus § relates, that during a spasmodic epidemic disease which prevailed in Smoland, in 1754, a tincture of the leaves of this plant was used with much success by the peasantry. Notwithstanding these eulogia, a sober estimate of the virtues of Alchemilla will not allow it any very eminent station in therapeutics, and it is now seldom employed. In the character of a mild astringent, however, it may be useful in certain cases of internal ulcers, leucorrhœa, chronic diarrhœa, dysentery, &c. It may be given in infusion or decoction, to the extent of four or five ounces, and the root is preferable to the leaves, as being more active.

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* Flore Medicale, tom. i. p. 42.

† Schroder, 529.

‡ "Nonnullæ, referente Friderico Hoffmanno quibus libata virginitas, solerter norunt decocto Alchemillæ in forma insessûs, sibi reparare dolosam *ϛενοχωριαν*, et illibatum mentiri virginitatis florem."—*Geoffroy*, Mat. Med. t. iii. p. 54.

§ Amœn. Acad. vol. vi. p. 447.

CXV.

LAVANDULA SPICA.

Common Lavender.

Class XIV. Didynamia.—*Order* I. Gymnospermia.

Nat. Ord. Labiatæ.

Gen. Char. *Calyx* ovate, somewhat toothed, supported by a bractea. *Corolla* resupinate. *Stamens* within the tube.

Spec. Char. Leaves sessile, linear-lanceolate, downy, revolute at the margin. Spike interrupted, naked.

SYNONYMES.

Latin......	Lavandula angustifolia. *Bauh. Pin.* 216. Lavandula flore cœruleo. *Ger. Em.* 583. Lavandula major, sive vulgaris. *Raii Hist.* 512. *Park. Theatr.* 73. Pseudonardus mas. *Fuchs.* 845, c. 303. Lavandula Spica. *Lin. Sp. Pl.* 803. *Willd.* iii. 60.
French....	Lavande; Lavande commun.
Italian	Lavanda ; Spigo.
Spanish....	Espliego; Alhuzema.
Portuguese.	Alfazema; Lavanda.
German....	Lavendel; Spieke.
Dutch.....	Lavendel.
Dan. & Swe.	Lavendel.
Polish.....	Lawanda.
Russ......	Lawendul.

Description.—Lavender is a small odoriferous shrub, from a ligneous fibrous root, sending up an erect quadrangular stem, which is much branched, and from two to three feet in height. The leaves are opposite, linear-lanceolate, very entire, somewhat hoary, those of the branches revolute at the margin ; the lowermost tapering into a petiole, clothed as well as the stem with minute stellate hairs. The flowers are arranged from six to ten together, in opposite whorl-like cymes, forming an interrupted, elongated, terminal spike; the bracteæ, at the base of the cymes, are ovate-cordate, acuminate, and of a brown colour; those at the base of the pedicels unequally bifid and subulate. The calyx is tubular, bilabiate, thirteen-nerved; the upper lip erect, roundish, ovate, projecting beyond the lower lip; the lower lip truncate, with three obsolete teeth. The corolla is violet-coloured, with an elongated tube, and a bilabiate limb; the upper lip bifid, tomentose externally; lower lip with three ovate spreading segments, shorter than the upper lip. The stamens are didynamous, and inserted on the lower side of the tube of the corolla (resupinate); the anthers small, peltate, ciliate, two-celled. The germen, or ovary, is deeply four-lobed, surrounded at the base by a disk, and from its centre rises a slender style, terminated by an obtuse bifid stigma. The fruit consists of four small nuts, umbilicate at the base, enclosed in the persistent calyx, each containing a single seed; but seldom more than one comes to perfection. Plate 29, fig. 2, (*a*) entire flower; (*b*) corolla opened to show the stamens; (*c*) calyx and pistil; (*d*) pistil isolated; (*e*) calyx opened, showing one developed and three abortive nuts.

"The arid rocks of Provence and other southern countries of Europe, afford this elegant shrub, which perfumes with its delicate aroma, and enlivens by its beautiful flowers, the sterility that surrounds it." It has been cultivated in the English garden from the year 1568. It flowers from June to August.

The systematic name Lavandula, whence the English *Lavender*, is derived from *lavare*, to wash; because the ancients used it as a perfume when they took the bath. Some writers imagine that this plant is the *stœchas* of the ancients; it is most probably the *Pseudo-nardus* of Pliny.

There are two varieties of this species of Lavender, the white-flowered (*L. Spica alba*), and the broad-leaved (*L. Spica latifolia*); the latter appears to be the male Lavender, as it was erroneously called by the old botanists; it has a more *virose* odour than the other kinds. The plant before us is extensively cultivated, for the sake of its flowering-spikes, at Mitcham, Henley-on-Thames, and several other places in this country.

Culture.—Lavender is easily propagated by slips or cuttings taken off in the spring months. The lower leaves being stripped off, the slips should be planted in a shady border, four inches apart. In autumn they may be transplanted, and if intended for a crop, they should be set in rows two or three feet asunder. The flowers are cut in July, in a dry day, and tied up in bundles for use.

QUALITIES AND GENERAL USES.—Lavender-flowers are much esteemed for their delicate fragrance, which is more permanent than that of many plants; hence, it is often placed among linen,* and it has the reputation of preventing the depredations of moths and other insects. The distilled water is a well-known cosmetic; and the oil obtained from the flowers, designated in commerce *oil of spike* (huile d'aspic, *Fr.*), is employed in the Arts as a varnish, also for preserving stuffs, books, &c., and for destroying insects. This oil is not unfrequently adulterated with alcohol and oil of turpentine. The former may be detected by pouring a portion of the oil into water, which combines with the alcohol and leaves the volatile oil at the surface; if turpentine be present, it may be known by the peculiar smell and thick dark fumes which arise when a little of the suspected oil is burnt in a spoon. "In point of fragrance, none of the foreign oil of Lavender comes into competition with that distilled in England. The oil which passes first over has the highest and most perfect scent, and is frequently kept separate, and sold at a proportionate price. When the stalks and leaves are distilled with the flowers, the odour of the oil is considerably deteriorated."†

The leaves and flowers, but especially the latter, have a strong, sweet, fragrant odour, and a warm, bitterish, pungent taste. Alcohol extracts their virtues by infusion more completely than water, but distilled in the latter fluid, the whole of the volatile oil‡ on which their virtues depend passes over. It affords a considerable portion of camphor.

MEDICINAL PROPERTIES AND USES.—Lavender is stimulating, carminative, and tonic. Like other aromatic substances, it exercises on the animal economy a prompt, and more or less vivid excitation both of the nervous and sanguineous systems. It has been commended in syncope, palsy, palpitations of the heart, vertigo, lethargies, spasms, convulsions, colic, suppression of the menses, and a host of other affections. How far the eulogia so profusely passed upon its panaceatic powers are merited needs no comment, for we cannot but perceive that Lavender can only be useful in nervous debilities, and in those affections which proceed from a want of energy in the animal functions, and that it is inadmissible where there is plethora, heat, or irritation. Cullen[*] considers it to affect the nervous system only, but in this opinion he is not well supported; neither does its allowed emmenagogue quality tend to prove that point. As a cephalic it is unquestionably most grateful and efficient. Taken internally, it excites appetite, removes flatulency, and in certain cases increases the action of the skin, kidneys, and uterus. It induces diaphoresis, accelerates the flow of urine, and promotes menstruation. An infusion may prove useful in chronic catarrh and rheumatism. The tincture may be given in general paralysis and paralysis of the tongue, and for the last, the leaves masticated will sometimes be beneficial, through the salivation they induce. The dried plant, enclosed in bags, has been empirically applied to the head in apoplexy, but more rationally to bruises and to favour the suppuration of tumors. The essential oil is powerfully stimulant, and forms both an odoriferous and suitable adjunct to liniments and pomades. The distilled water also is an elegant perfume for the sick-chamber.

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* "And lavender, whose spikes of azure bloom
Shall be erewhile in arid bundles bound,
To lurk amidst her labours of the loom,
And crown her kerchiefs clean with mickle rare perfume."

Shenstone's School-mistress.

† Brande's Manual of Pharmacy, 1833, p. 135.

‡ This oil resides chiefly in the calyces, and is contained in small receptacles or pores with an open orifice. It appears to be most abundant when the flowers are beginning to fade, at which time, according to Lewis, one ounce may be obtained from sixty ounces of the flowers.

The following preparation is well-known under the domestic synonymes of *Red Lavender* or *Palsy Drops*:—

COMPOUND TINCTURE OF LAVENDER.[†]

Take of Spirit of Lavender[‡]	a pint and a half;
Spirit of Rosemary	half a pint;
Cinnamon, bruised	two drachms and a half of each;
Nutmegs, bruised	
Red Saunder's wood	five drachms.

Macerate for fourteen days and filter.

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[*] Mat. Med. vol. ii. p. 148.

[†] Pharmacopœia Londinensis, 1836.

[‡] Spirituous Lavender Water.

CXVI.

PRUNUS LAURO-CERASUS.

Common or Cherry-Laurel.

Class. XII. ICOSANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. ROSACEÆ.

GEN. CHAR. *Calyx* five-cleft. *Petals* five. *Drupe* with a hard smooth nut.

SPEC. CHAR. Flowers racemose. Leaves evergreen, ovate-lanceolate, with two or four glands beneath. Fruit ovate-acute.

SYNONYMES.

Latin	Cerasus folio laurino. *Bauh. Pin.* 450. Lauro-cerasus. *Ger. Em.* 1603. *Raii Hist.* 1549. Cerasus trapezuntina, sive Lauro-cerasus. *Park. Theatr.* 1518. Prunus Lauro-cerasus. *Lin. Sp. Pl.* 678. Cerasus Lauro-cerasus *Lois,* in Duham, ed. nov. 5. p. 6.
French	Laurier-Cerise; Laurier-Amande.
Italian	Lauro regio; Lauro di Trabesonda.
Spanish ...	Laurel real; Laurel guindo.
Portuguese.	Loirocerejo.
German ...	Kirschlorbeer; Kirschlorbeerbaum.
Dutch.....	Laurierkers.
Danish....	Kirselaubœrtræ.
Swedish ...	Lagerkirs.

DESCRIPTION.—Cherry-Laurel is a small evergreen tree, from six to eighteen feet high, sending off long spreading branches, covered with an ash-coloured green bark. The leaves are alternate, persistent, shortly petiolate, firm, coriaceous, ovate-lanceolate, or elliptical, with an acute curved apex, remotely and minutely serrated, furnished with one or two pairs of glands near the midrib at the base, and of a deep shining-green colour. The flowers are disposed in a spicate axillary raceme, rather shorter than the leaves; each flower supported by a short simple peduncle. The calyx is inferior, urceolate, and five-toothed. The corolla consists of five small, white, obovate petals, inserted on the calyx, of a white colour, and fragrant odour. The stamens are about eighteen in number, unequal, arising from the throat of the calyx, curved inwards in æstivation; the filaments subulate; anthers roundish, yellow, innate, two-celled, opening longitudinally. The germen is roundish-oblong, one-celled, containing two suspended ovules, and supporting a columnar style, which is furrowed on one side, terminated by a reniform stigma. The fruit is an ovate, acute, glabrous drupe, of a shining purplish-black colour externally, containing a smooth, compressed putamen or stone. Plate 24, fig. 3, (*a*) raceme of flowers; (*b*) calyx opened to show the insertion of the stamens and pistil; (c) horizontal section of the fruit; (*d*) putamen.

This well-known evergreen is a native of the Levant, Caucasus, and the mountains of Persia. Clusius received it in 1576 from David Ungand, Ambassador from the Emperor of Germany at Constantinople, with some other rare plants, all of which perished, except the Common Laurel and the Horse-Chesnut. It was sent by the name of *Trabison Cumasi* or *Date of Trebizond*, having been brought from that place. It was first cultivated in England about the year 1629; and Parkinson informs us, that Mr. Cole, a merchant, who had a single plant in his garden at Highgate, used to cover it in winter with a blanket. It is now extremely common in our shrubberies, where it flowers in April and May.

This tree, in popular language, has usurped the name of the true Laurel or Sweet Bay (*Laurus nobilis*), which undoubtedly furnished the laurel crown, the reward and the symbol of victory among the ancients. It has received this name from the resemblance of its leaves to those of the *laurus*; which, together with the similarity of its fruit to the cherry (*cerasus*), has suggested the specific term *Lauro-cerasus.* The term Prunus indicates the affinity of this plant to the plum and cherry tribes, hence included in one genus by Linnæus. Some authors, however, consider these as so many distinct genera,—the *Pruni*, distinguished by the resinous, glaucous secretion, called *bloom* on their fruit; while the others are destitute of bloom; and the Cerasi and Lauro-cerasi are separated by the character of the inflorescence, which in the former is in tufts or sertula, and in the latter in spikes or racemes.

QUALITIES AND GENERAL USES.—The pulp of this fruit is eaten with avidity by birds, and is quite innocuous to man; and, though not pleasant to the taste, has been occasionally used in puddings. The kernels or seeds of the drupe contain a poisonous principle, like those of the bitter almond, the peach, &c., but are employed to flavour various liqueurs. The leaves possess the same property, and are similarly used, to prepare ratafia, noyeau, and maraschino, and to flavour custards, puddings, cakes, jellies, &c., while some persons infuse them in tea, coffee, and similar beverages. In small quantities these leaves will do no harm, and may even facilitate digestion; but caution is requisite in their employment, as subsequent remarks will prove.

The different parts of this tree are nearly inodorous, except the flowers, which have considerable fragrancy, combined with a certain nauseous odour. The leaves are slightly styptic, and very bitter, and, when bruised, emit the odour of bitter almonds: these qualities are lost in drying. Water completely extracts their virtues in distillation, and an oil containing prussic or hydrocyanic acid passes over in small quantity, the greater part remaining combined with the water. Alcohol likewise obtains their active properties by distillation, and partly by infusion. The inner bark* of the tree exhales a similar odour to the bruised leaves and kernels, and probably contains the same virulent principle. It is probable that in these kernels, as in the bitter almond, the essential oil does not exist ready formed, but is developed only in consequence of the contact of water.

POISONOUS PROPERTIES.—We have already adverted to the frequent use of Laurel-leaves for culinary purposes; several accidents have been owing to this source. Dr. Paris† mentions an instance of several children at a boarding-school having been dangerously affected by a custard flavoured with the leaves; and accounts have appeared in the newspapers of persons who have lost their lives by taking ratafied brandy, and other spirituous preparations which contained this deleterious ingredient. Dr. Madden* relates several accidents which occured at Dublin, in consequence of the distilled water and brandy flavoured with it, being incautiously swallowed. Fodere† mentions two cases of servants having stolen and drunk a bottle of distilled Laurel-water, which they mistook for a cordial: being afraid of detection, they swallowed it quickly, and in a few minutes expired in convulsions. The most noted case, however, of poisoning by Laurel, and one which produced an extraordinary sensation at the time of its occurrence, [1780.] was that of Sir Theodosius Boughton, a young gentleman of fortune in the county of Warwick, who had nearly attained his 21st year. In the event of his dying before he attained his majority, the greater part of his fortune descended to his sister, who, with her husband, Captain Donellan, and their mother, Lady Boughton, resided with him. Sir Theodosius was labouring under a slight syphilitic affection, for which he was receiving medical advice. On the morning of August 31, he arose at an early hour, and apparently in perfect health, and asked for his usual draught, which was accordingly poured into a cup by his mother, Lady Boughton. He had not, however, swallowed more than half of it, when he complained that it was so nauseous, that he did not think he could keep it on his stomach, and Lady B. observed that it had a strong smell of bitter-almonds. In about two minutes after swallowing the draught, he appeared to struggle very much, as if to keep it down, and had a rattling and gurgling in his stomach. These symptoms continued about ten minutes, when he seemed to be inclined to go to sleep, and Lady Boughton left the room, but on returning again in about five minutes, she found him with his eyes fixed, his teeth clenched, and froth running out of his mouth. He died in about half an hour afterwards. Suspicion was naturally excited that his death was occasioned by poison, and Sir W. Wheeler, the guardian of the young Baronet, wrote to Captain Donellan requesting that the body should be examined, but he eluded these wishes, and the examination did not take place until the second day after the interment, and ten days after death. The inspectors stated that the morbid appearances were such as would be produced by Laurel-water, and Captain Donellan was put upon his trial for the murder. The evidence showed that Donellan came into the room when Sir Theodosius was dying and inquired where the physic-bottle was; on receiving it, he threw away the contents and rinsed it, and did the same with another bottle, although Lady B. remonstrated, and objected to his conduct. It also appeared, that he had a still in his own room, and in his secretaire was found that part of the Philosophical Transactions, in which there is an essay on the preparation and effects of Chery-Laurel-water, and the page was turned down at that particular part. The celebrated John Hunter was a witness on the trial, and he gave it as his opinion, that apoplexy or epilepsy might have produced the effects stated; but he has been much censured for the wavering and conflicting tenor of his evidence. A verdict of guilty was brought in against Captain Donellan, and he was accordingly executed. A diversity of opinion, even now prevails, as to the justice of the sentence; and though, from the attendant circumstances, there can be no doubt of his guilt, it cannot be regarded as indisputable.*

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* The bark of the Bird-Cherry (*Prunus Padus*), yields by distillation prussic acid, and the same substance exists in the flowers and young shoots of the peach and the cherry, and more or less either in the kernel or the leaves of all the Amygdalaceæ, and not improbably in some of the Pomeæ or Apple tribe.

† Med. Jurisprudence, vol. ii. p. 402.

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* Philosophical Transactions for 1737.

† Medécine Legale iv. p. 27. See also the cases enumerated in Murray's Apparatus Medicaminum, tom. iii. p. 216.

The distilled water is poisonous, both to vegetable and animal life. When animals are made to swallow it, or it is injected into the intestines, or introduced into the cellular tissue, or applied to denuded surfaces, in sufficient quantity, it causes giddiness, difficult respiration, loss of muscular motion, sometimes convulsions, or a tetanic state, and absolute insensibility, terminated by speedy death. "The essential oil, of which sixteen drops were put on the tongue of rabbits, killed them in nine, fifteen, or twenty minutes. The symptoms were slow breathing, palsy of the hind legs, then general convulsions; and death was preceded by complete coma. A very extraordinary appearance was found in the dead body; blood extravasated abundantly in the trachea and lungs."†

"The distilled water loses its power after long keeping. Hence the dose, sufficient to produce fatal effects, will vary greatly; and its strength will also vary, according as the water has been filtered or not. One ounce has proved fatal, and half-an-ounce has caused only temporary giddiness, loss of power over the limbs, stupor, and sense of pressure in the stomach."

TREATMENT.—Milk, oil, coffee, &c. have been recommended in cases of poisoning by the Laurel, but their efficacy is more than doubtful: the prompt administration of emetics and laxatives, is much more to be relied on. Warm brandy-and-water, the inhalation of dilute ammonia, or chlorine, and other stimulants, have been particularly recommended, together with affusions of cold water upon the head.

MEDICINAL PROPERTIES AND USES.—There can be no doubt that a plant so energetic as the Cherry-laurel, must produce potent effects in certain diseases. By Stoerck, it appears to have been entirely overlooked; and although some would decry its admission into general medical use, it is not without able advocates.

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* See the Trial, &c., taken in short-hand by *Gurney;* or Beck's Medical Jurisprudence.

† *Taddei,* as quoted by Dr. Christison in his Treatise on Poisons, p. 722.

Linnæus informs us, that in Switzerland, it is commonly and successfully used in pulmonary complaints. Baylies[*] employed a saturated infusion in melancholy, asthma, rheumatism, and, internally and externally against scirrhous tumours; but Vogel[†] asserts, that he found it totally useless in scirrhus of the breast. Cheston[‡] also employed an infusion for cancer of the lips, and malignant ulcers. Langrish mentions its efficacy in agues; and as Bergius found bitter almonds to have this effect, we may from analogy conclude, that this power of the Lauro-cerasus is well established.[§] Indeed, Dr. Langrish remarks, that in his neighbourhood, the powder of the dried leaves, to the quantity of as much as would lie on a shilling, was a favourite remedy with the common people; this was taken in a glass of wine, two hours before the accession of the paroxysm, and repeated three times. Cameron[‖] gave the infusion in obstinate hepatic engorgements; and others have even said, that they had found it serviceable in the treatment of syphilis.[¶]

The best form in which the Lauro-cerasus can be given, is the infusion. The dose of the distilled water, or of the oil, should not be more than two or three drops at the first, gradually augmenting the quantity.

BAYLIES' INFUSION OF CHERRY-LAUREL.

Take of the leaves of Cherry-laurel	one pound;
Boiling water	one pint.

Macerate, for two hours, and strain.—Dose, from thirty to sixty drops, three or four times a day.

CHESTON'S INFUSION OF CHERRY-LAUREL.

Take of the leaves of Cherry-laurel	four ounces;
Boiling water..................	two pints.

Digest till cold, then add four ounces of honey. Used externally, in lotions or fomentations, or spread on linen, and applied to diseased parts.

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[*] Practical Essays on Medical Subjects, p. 37.

[†] Chirurg. Wahrnehm. 1. Samml. p. 48.

[‡] Pharmacopée Universelle, par A. J. L. Jourdan, t. i. p. 709.

[§] Woodville; Med. Bot. iii. p. 517.

[‖] Murray; App. Mat. Med. t. iii. p. 226.

[¶] Flore Médicale, t. iv. p. 193.

CXVII.

LACTUCA SATIVA.

Garden Lettuce.

Class XIX. SYNGENESIA.—*Order* I. POLYGAMIA ÆQUALIS.

Nat. Ord. COMPOSITÆ.

GEN. CHAR. *Involucre* imbricated, cylindrical, its scales with a membranous margin. *Receptacle* naked. *Pappus* simple, stipitate.

SPEC. CHAR. Leaves rounded; cauline leaves cordate. Stem corymbose.

SYNONYMES.

Greek	θριδαξ
Latin......	Lactuca. *Bauh. Pin.* 122. Lactuca sativa. *Ger. Em.* 307 *Park. Theatr.* 812. Lactuca capitata. *Dod. Pempt.* 634. Lactuca sativa. *Lin. Sp. Pl.* 1118. *Gærtn. Fruct.* ii. 362.
French.....	Laitue.
Italian	Lattuga.
Spanish....	Lechuga.
Portuguese.	Leituga.
German....	Lattich; Gartensalat.
Dutch	Latuw; Gewoone Salade.
Dan. Swe.. *& Russ* .	Laktuk.
Bohemian...	Locyka; Salat.
Polish	Loczyga.

DESCRIPTION.—The root is annual, tapering and fibrous. The stems are erect, smooth, cylindrical, leafy, branched towards the summit, and attain the height of two or three feet. The leaves are alternate, roundish-oblong, rugose, toothed and undulated at the margin, and of a shining light-green colour; the lowermost spreading, the cauline ones smaller, amplexicaul, cordate, acute. The flowers form a large, spreading leafy corymb at the top of the stem. The involucre consists of several imbricated scales, or bracteæ, unequal, flat, acute, and membranous at the margin. The corollæ are yellow, numerous, in several rows, perfect, equal, ligulate, abrupt, with four or five teeth. The five filaments are capillary, and very short, with the anthers united into a tube. The germen is ovate, or oblong, surmounted by a filiform style, rather longer than the stamens, and tipped with two reflexed stigmas. The fruit is an ovate-elliptical pericarp or akenium, furrowed and compressed, surmounted with the stipitate pappus. The receptacle is naked and dotted. Plate 29, fig. 4, (*a*) involucre magnified; (*b*) entire flower or floret; (*c*) the ripe fruit crowned with the pappus.

The cultivated Lettuce, with its numberless varieties, is familiar to every one; but it has been so metamorphosed by the skill and industry of man, that its origin is unknown. Many botanists consider the strong-scented Lettuce (*L. virosa*) as the parent species. The flowers appear in July; they expand only on bright sunny mornings, and close at the approach of rain.

The generic term is derived from *lac*, milk, in allusion to the milky juice which exudes from the wounded stem. There is every reason to think that the Lettuce is the θριδαξ of Dioscorides,* and of Theophrastus.†

There are three species of Lettuce natives of Britain; the strong-scented (*L. virosa*), with spreading, oblong, toothed, amplexicaul leaves, which are prickly underneath at the midrib, and panicled flowers. It grows on banks, and by way-sides, in a chalky soil, and flowers in August. The prickly Lettuce (*L. scariola*) known by its upright, lanceolate, saggitate, pale-coloured leaves. The least Lettuce (*L. saligna*) is a slender plant, with lanceolate radical leaves, and linear-saggitate cauline ones; besides which, its flowers are lateral and almost spicate. It grows in chalky waste ground, near salt marshes, in the south-east of England.

Qualities and general Uses.—The Lettuce was much esteemed as a salad by the Romans. A prejudice, however, was for some time entertained against it. "*Venerem enervandi* ;" perhaps derived from the works of Dioscorides.[*] Hence Eubolus Comicus designated it, *the food of dead men* (*mortuorum cibus*). After Antonius Musa had cured Augustus of hypochondriasis by means of this plant, it came into great repute. It was eaten after vinous liquors, to correct their effects, and at night to procure sleep.

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* Mat. Med. lib. ii. c. 165.

† Hist. lib. vii. c. 3.

> "Grataque nobilium, requies Lactuca ciborum."

According to Horace

> " ——— Lactuca innatat acri,
> Post vinum stomacho."
>
> *Hor. Satir.* lib. ii. v. 5.

In the reign of Domitian, the practice of eating it after supper appears to have been reversed; and the poet Martial inquires, "Why the Lettuce, which was partaken of last at supper by our ancestors, should begin our repasts ?"

> "Claudere quæ cænas Lactuca solebat avorum
> Dic mihi, cur nostras inchoat illa dapes."
>
> Lib. xi. Epig. 14.

We are also informed by the pages of mythology, that after the death of Adonis, Venus threw herself on a bed of Lettuces, to mitigate her passion, and assuage her grief. Galen[†] tells us that when from the infirmities of age and excessive study, he was unable to sleep, he found the Lettuce eaten at night a valuable hypnotic; but he also used the decoction of the plant. The plant is generally blanched by gardeners, and though, in this state, it is more tender, sweet and succulent, it may not be quite so wholesome as in its natural state, especially if the ease with which it is digested, even by dyspeptic patients, be correctly attributed to its slight narcotic principle. Dr. W. Philip considers that it acts in this respect like small doses of opium.

The medicinal qualities of Lettuce depend on a milky juice, which is contained immediately under the cuticle, and exudes on the slightest laceration of the stem or flower-stalks. This juice is pellucid and colourless when existing in the proper vessels of the plant, but becomes milky when first exposed to the air, and afterwards acquires a brownish colour, resembling that of opium; it has been called *Lactucarium*, and differs from the Thridace of the French, which is an extract, obtained from the bruised shoots. Lactucarium, when dry, is hard and brittle like gum, but quickly assumes a pasty consistence, if exposed to the open air. Dissolved in distilled water, the filtered solution is clear and of a brownish colour; it strongly reddens litmus paper; with ammonia, it yields a white, flocculent precipitate, and a copious precipitate is produced in it by an infusion of gall-nuts.* It affords by analysis, resin, mucilage, wax, caoutchouc, and a narcotic principle analogous to morphine.

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[*] Dioscorides observes, "Epotum vero ipsius semen, venerem assiduè somniantibus opitulatur, et concubitum arcet."—*Mat. Med.* l. c. In later times, Lobel and Ray have disseminated a like opinion, but it needs not to be refuted.

[†] De Alim. fac. lib. ii. c. 40.

Mr. Probart has communicated to Dr. Paris† the following method of procuring *Lactucarium*:—

"I have the Cos Lettuce planted about eight inches asunder in rows, between which there is sufficient space to enable persons to pass up and down without injuring the plants. I commence my operations just before the plant is about to flower, by cutting off an inch of the stem; the milky juice immediately exudes and is collected on pieces of wove cotton, about half a yard square. As soon as this becomes charged, it is thrown from time to time into a vessel containing a small quantity of water, which, when sufficiently impregnated, is evaporated at the common temperature of the atmosphere, by exposure in a number of shallow dishes. The *lactucarium* in a few hours is found adhering to the vessels in the form of an extract, but differing from every other in all its sensible properties; this method enables me to collect *lactucarium* with great facility and despatch, but it is still attended with considerable expense, as the proportion of milky product is necessarily very small, and the price of the medicine consequently high. This consideration led me to make further experiments for the purpose of ascertaining whether an *extract* might not be obtained from the plant, possessing all the properties of lactucarium, when administered in large doses, and which could be introduced at a comparatively trifling cost. In prosecuting this inquiry, I found that the plants contain most of the milky juice when they have flowered and the leaves are beginning to assume a yellow hue, and I observed that when cut down, the milky juice assumes for the most part a concrete form, having subsided in the bark of the stalk and in the old leaves; a circumstance which accounts for the extreme bitterness of these parts. I was naturally led from these circumstances to choose the above period for my operations, and to select those parts only of the plant for my extract, rejecting the substance of the stalk and the young sprouts. My method of procuring the extract is as follows: I first macerate the parts in water for twenty-four hours, and then boil them for two, after which I allow the clear decoction to drain through a sieve without using any pressure; this is then evaporated, as far as it can be done with safety, and the process is finished in shallow dishes, in the manner above described for obtaining lactucarium. This extract, which I have called 'extractum lactucæ concentratum,' is of course less powerful than lactucarium, but it possesses all the properties in larger doses, and it has been found equally useful in a number and variety of cases, and is not more than a sixth part of the price."

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* Magendie's Formulary, translated by Gregory, p. 173.

† Pharmacologia 1833, p. 515.

"M. Caventou obtains Thridace in the following manner: he gathers the plant just before it flowers, and strips off the leaves; he then slightly bruises the stalks in order to express the juice, which is evaporated to the proper consistence, at a temperature not exceeding 30 or 35 degrees."* (86 to 95 degrees Fahr.)

The strong-scented Lettuce *(L. virosa)* already mentioned, possesses more vigorous properties than the cultivated kind, and Orfila ranks it among the narcotic poisons. It may be used medicinally in the same manner as the *L. sativa*, for its sedative and hypnotic effects.

MEDICINAL PROPERTIES AND USES.—Besides the refreshing, temperating, and relaxing properties of this vegetable, and its consequent employment in diseases of irritation, it is considered to possess narcotic powers. A decoction of the leaves forms a useful drink in constipation, gastric and intestinal engorgements, and to alleviate pains accompanied with heat and irritation. Lanzoni, S. Pauli, and the erudite Geoffroy assure us of its power of dispelling the anxieties, eructations, and flatulency of hypochondriacs. Hypochondriacism, in fact, originates more frequently than is generally imagined from a state of irritation of the inner membrane of the stomach and intestines; so that we may safely concede that this remedy is useful in certain cases, and often more beneficial than the stimulants so constantly and indiscreetly administered. Nevertheless, hypochondriasis frequently originates from other causes, and, of course, different measures are necessary. Suetonius relates that Augustus Cæsar erected a statue in honour of his physician, Antonius Musa, who had relieved him from this malady by prescribing lettuce:† this imperial act is probably a much more evident proof of the Emperor's regard for Musa, than of the absolute efficacy of the plant for the complaint in question. In obstructions of the urinary passages, calculous affections, satyriasis, nymphomania, and other *lésions* of the reproductive organs, from its temperative and cooling nature, the Letttuce has been favourably commended.

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* Magendie, l. c.

† Vaillant; Bot. Paris, præf.

Galen,[*] Dioscorides,[†] and Celsus,[‡] attributed to it narcotic powers; and, notwithstanding the scepticism of some writers upon this head, modern experience has confirmed the observation of our illustrious primogenitors, inasmuch as that Dr. Duncan, sen., has lately suggested[§] the use of *lactucarium* as a narcotic, and Dr. Coxe, of Philadelphia, as a substitute for opium. The former conceives it to be particularly well adapted for allaying the cough in phthisis pulmonalis, and as a general soporific; in which character it is received into the British Pharmacopœias. Lettuce emulsions, made with the seeds, have been supposed to be more refrigerant than those of the almond, and hence have been sometimes preferred in heat of urine and other disorders from acrimony or irritation[||]

The Lettuce is externally applied, in decoctions or cataplasms, to painful inflammations and burns, and for all cases where emollient topical applications are useful.

Lactucarium may be taken in doses from two to six grains. Dr. François states that the first dose occasions a strange sensation in the stomach, resembling cold, but not unpleasant. This viscus soon becomes habituated to its action; it is therefore necessary to increase the dose rapidly, to abandon its use a day or two, and to return to the original dose, which is generally two grains for an adult. If this quantity is not sufficient to cause sleep, the patient is at least exempt from agitation and pain during the night; and this repose is neither accompanied nor followed by narcotism, stupor, constipation, suspension of any function, itching, or other inconveniences consequent on the use of opium.[¶]

TINCTURE OF LACTUCARIUM.

Take of Lactucarium .... one ounce;
Proof spirit .... one pint.

Digest for seven days, and filter.—Dose, from fifteen to sixty drops.

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[*] De Aliment. Facult. lib. ii. c. 40.

[†] Lib. ii. c. 165, 166. p. 44. ed Sarrac.

[‡] Lib. ii. c. 32. p. 108. ed Kraus.

[§] Observations on Pulmonary Consumption, Append. p. 162.

[||] Lewis; Mat. Med. p. 332.

[¶] Magendie's Formulary, transl. by Dr. Gregory. p. 175.

CXVIII.

LILIUM CANDIDUM.

White Lily.

Class VI. HEXANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. LILIACEÆ.

GEN. CHAR. *Perianth* campanulate, of six spreading reflexed leaves, channelled at the base. *Capsule* trigonous; valves connected by matted hair.

SPEC. CHAR. Leaves lanceolate, scattered, narrowed at the base. Perianth campanulate, smooth within.

SYNONYMES.

Greek	κρινον; λειριον.
Latin	Lilium album. *Bauh. Pin.* 76. *Ger. Em.* 190. *Raii Hist.* 1100. *Park. Theatr.* t. 37, f. 4. Lilium candidum. *Fuchs.* 359. c. 158. Lilium. *Cam. Epit.* 570. Lilium candidum. *Lin. Sp. Pl.* 433.
French....	Lis blanc.
Italian	Giglio bianco.
Spanish ...	Lirio blanco; Azucena.
Portuguese.	Leirio.
German ...	Weisse Lilie.
Dutch	Wite Lelie.
Danish....	Hvid Lilie.
Swedish ...	Hwit Lilie.
Polish	Lilia.

DESCRIPTION.—The root is bulbiferous, viz. consisting of several thick, fasciculated descending fibres, springing from a fleshy platform, which supports the ovoid, yellowish, scaly body, named the bulb.* The stem is simple, erect, cylindrical, leafy, and from two to three feet in height. The leaves are alternate, scattered, numerous, elliptical, and lanceolate, very smooth, undulated, and of a light, shining-green colour. The flowers are axillary and terminal, of large size, brilliant whiteness, and fragrant odour; each flower is supported on a short bracteated peduncle, at first erect, afterwards slightly drooping. The perianth (calyx) is campanulate, consisting of six, ovate-lanceolate, obtuse, somewhat revolute segments, traversed internally by a nectareous longitudinal channel, three alternately rather smaller. The six stamens are furnished with subulate filaments, and oblong, versatile, yellow anthers, which burst inwardly. The pistil consists of a superior, oblong, trigonal, furrowed germen, a cylindrical, clavate style, and a trigonal, obtuse, downy stigma. The fruit is a three-sided, oblong capsule, three-celled, three-valved, many-seeded; the seeds packed upon one another in two rows. Plate, 30 fig. 1, (*a*) pistil and stamens; (*b*) capsule; (*c*) seeds.

The White Lily, one of the oldest inhabitants of the flower-garden, and universally admired, is thought to have come originally from the Levant. Haller found it in Switzerland, and De Candolle on the Jura mountains, apparently wild. It flowers in June and July.

The generic name is derived from the Celtic *li* signifying *whiteness*, the flowers being considered the emblem of whiteness. The Greek term for the Lily was *λειριον* or *λιριον*; it was also called *κρινον* in common with the Narcissus, Hyacinth, &c. There is no doubt that the Lilium album of Pliny † is our White Lily. The ancients feigned that the flowers were originally of a deep-yellow colour, but when Jupiter removed Hercules from the breast of Juno, some of her milk falling upon them rendered them white. Thus Ovid:—

> "Dum puer Alcides Divæ vagus ubera suxit
> Junonis, dulci pressa sapore fuit;
> Ambrosiumque alto lac destillavit Olympo
> In terras fusum Lilia pulchra dedit."

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* The bulb, with its attached fibres, is commonly regarded as a root and termed a *naked bulb*; but the fibres constitute the true root, and the bulb, as it is called, is rather a species of bud or subterranean stem.

† Hist. lib. xxi. c. 5.

Pliny ranked the Lily as second only to the Rose; and Anacreon in his odes compares Venus to this flower.

Our own poets have not forgotten the praises of the Lily. Thomson's beautiful paraphrase of Matt. vi. 28, is familiar to every reader.

> " Queen of the field, in milk-white mantle drest,
> The lovely Lily waved her curling crest."
> *Gawin Douglas.*

> " The Lily of all children of the spring
> The palest,—fairest too where fair ones are."
> *Barry Cornwall.*

Qualities.—The bulb is inodorous; to the taste it is insipid and sweetish, and, when masticated, rather bitter and extremely mucilaginous. Placed in water, it is soon decomposed, and becomes intolerably fetid. According to Spielmann, the mucilage constitutes about one-quarter the weight of the bulb. It also contains fæcula, and a bitter principle like many other plants of the same family, but it has not been minutely examined. The recent flowers * exhale a sweet fragrant odour, which is totally dissipated by drying, and by evaporating the aqueous or spirituous menstruum, in which it is enveloped. Both water and spirit are impregnated with the odour, by infusion or distillation, but no essential oil has been obtained.

Medicinal Properties and Uses.—In consequence of the aromatic principle which the flowers exhale in the recent state, we cannot but allow that they act on the nervous system with great energy, even to the causing syncope and death ;† but this exciting property is lost by coction; hence, they may with great propriety enter into anodyne and emollient fomentations, lavements, and collyria. Linnæus says, that they have been used for epilepsy; but no reliance is now placed in their antiepileptic powers. Infused in oil, they have been applied to painful and obstinate tumours; scirrhus of the uterus in particular.* The distilled water has been prescribed in coughs, asthma, and other pulmonary affections, but its efficacy is not well authenticated. It has, however, been in great esteem as a cosmetic, to preserve and improve the freshness of the complexion, and to remove pimples and freckles. Geoffroy speaks very decidedly in favour of it, provided a small quantity of salt of tartar be dissolved in it. The anthers are esteemed anodyne, antispasmodic and emmenagogue, and were formerly exhibited with the view of favouring the expulsion of the fœtus in difficult parturition, and to promote menstruation, but without any just claim upon our confidence. They were given in a dried state and reduced to powder, in doses of from twenty to sixty grains. The bulb, infused in wine, was given in the plague; and, made into bread, was celebrated by Godorus† against dropsy. Externally, it is emollient and suppurative, and as such, is a very good application, in cataplasms, to local inflammations of the skin and cellular tissue, inflammatory tumours, swellings, wounds, and to painful or irritable ulcers.

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* The exhalations of the flowers are considered dangerous, and Murray (Appar. Med. tom. v. p. 89) mentions an instance which occurred in London, in 1779, of a female, whose death was attributed to the circumstance of her having these flowers at night in her bed-room, as she was found dead in the morning. A number of them, in a close room at night, would undoubtedly prove injurious. Ingenhousz correctly observes, that these deleterious effects do not depend on the odorous principle of the flowers.

† See Murray, App. Med. tom. v. 89.

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* Flore Medicale, t. iv. p. 222.

† Gerarde Herb. p. 191.

CXIX.

CONVALLARIA MAJALIS.

Lily of the Valley.

Class VI. HEXANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. LILIACEÆ.

GEN. CHAR. *Perianth* inferior, petaloid, deciduous, six-cleft, globose, or cylindrical. *Berry* three-celled. *Seeds* one or two in each cell.

SPEC. CHAR. Scape semi-cylindrical. Leaves two, ovate-lanceolate, radical. Flowers racemose, globose-campanulate, drooping.

SYNONYMES.

Latin......	Lilium convallium album. *Bauh. Pin.* 304. *Tourn. Paris.* 485. Lilium convallium. *Ger. Em.* 410. *Raii Syn.* 264. *Dod. Pempt.* 205. Ephemerum non lethale. *Fuchs.* 241, c. 89. Convallaria majalis. *Lin. Sp. Pl.* 451. *Eng. Fl.* ii. p. 154. *Eng. Bot.* t. 1035.
French....	Muguet; Muguet de Mai.
Italian....	Unifoglio; Mughetto.
Spanish....	Lirio de los valles.
Portuguese.	Unifolho.
German....	Mayblume.
Dutch.....	Lelie van den dale; Lely Convaly.
Danish....	Etblad.
Polish....	Konwalia.
Russ......	Landisch.

DESCRIPTION.—The rhizoma, or root-stock, is perennial, creeping, slender, whitish, and fibrous. The stem is a semi-cylindrical scape, from four to six inches in height, supporting two radical leaves, which are broad, ovate-lanceolate, entire, curved-ribbed, and of a bright-green colour, sheathing at the base. The flowers terminate the scape in a short, almost unilateral, raceme; each flower is pendulous, and is supported on a short peduncle, with a single lanceolate, membranous bractea at the base. The perianth is pure white, fragrant, globose-campanulate, six-cleft; the segments curved back. The six stamens have short subulate filaments, with two small obsolete glands at the base, where they are inserted into the perianth, terminated by erect, pyramidal, acute anthers. The germen is superior, ovate, three-celled, surmounted by a thick cylindrical style, tipped with a trigonal, obtuse stigma. The fruit is a globose scarlet berry, with pulp of a similar colour, three-celled (the dissepiments obliterated), each cell containing one or two seeds, which are roundish, angular, and whitish. Plate 30, fig. 4, (*a*) the root-stock; (*b*) corolla opened to show the stamens; (*c*) pistil; (*d*) berry; (*e*) the same cut transversely; (*f*) seed.

The Lily of the Valley occurs throughout Europe, as far as Lapland, and in North America, and is not uncommon in this country, in woods and coppices, in a light soil. It is very abundant in the woods about Woburn, Bedfordshire; and Gerard found it on Hampstead-heath. It flowers in May.

The generic name is formed from *convallis*, a *valley*, and answers to the common appellation of the plant. It has been called, provincially, May Lily, Lily Convalley, May-blossom, Ladder to Heaven, and, as Gerard tells us, Liriconfancie. Some writers suppose this plant to be the Lilium vernum of Theophrastus.*

The modest beauty and delicate fragrance of the Lily of the Valley, have rendered it a great favourite with the poets.

———— " Valley-lilies, whiter still
Than Leda's love."

Keats' Endymion, p. 10.

" The lily, silver mistress of the vale."

Churchill.

Shelley beautifully describes it in his " Vision of Spring-flowers," as the

———— " Naiad-like lily of the vale,
Whom youth makes so fair, and passion so pale,
That the light of its tremulous bells is seen
Through their pavilions of tender green."

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* Hist. lib. iv. c. 7.

It is eaten by sheep and goats, but refused by other animals. A beautiful green colour may be obtained from the leaves, with the addition of lime.

Qualities.—The rhizoma, usually termed the root, exhales a pleasant odour, although different from that of the flowers; it is sweetish to the taste at first, but afterwards disagreeably bitter. The recent flowers are very sweet and fragrant to the smell, while to the taste they are somewhat acrid and bitter. The odoriferous principle, like that of the White Lily, is fugitive, but may be obtained by distillation, both in water and spirit; no essential oil, however, has been detected in either of the distilled liquids. "The aqueous infusion of the flowers is very bitter, somewhat acrid and nauseous, of an orange colour, becoming red when saturated with sulphate of iron."[*] This, as well as the spirituous infusion, when evaporated, yield a very bitter, pungent extract, which has been compared to aloes.

Medicinal Properties and Uses.—The flowers are admitted into the first rank of cephalics, and, in addition, are said to be attenuant, deobstruent and diuretic, &c. For their cephalic and nervine properties they are employed, reduced to powder, as an errhine in apoplexy, epilepsy, coma, and vertigo; and for their other qualities, given internally in a variety of complaints; but they should never be administered when there is any inflammatory disposition of the brain. The spirit appeases the terror under which hypochondriacs often labour; is approved by Simon Pauli as an application to the spine of epileptic children, and also forms a good application to sprains and rheumatism: combined with ambergris, it was likewise recommended by Ettmuller,[*] in all sudden faintings, or affections of the head and nervous system, paralysis of the organs of speech, deafness (applied on cotton to the ear), in loss of memory, in nocturnal terrors, and against nightmare. In some parts of Germany a wine is made from the flowers mixed with raisins, and used for the same purposes as the water and spirit. The root is similar in properties to the flower: watery or spirituous extracts of either, given in doses of a scruple or half a drachm, act as gentle stimulating aperients and laxatives, and seem to partake of the purgative virtue, as well as the bitterness of aloes.* The fruit or berries are now rarely mentioned, notwithstanding they are affirmed to be useful in intermittents,† and as a vermifuge.‡

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[*] Bergius; Mat. Med. vol. i. p. 270.

[†] Ettmuller; Opera. p. 596.

DISTILLED WATER OF CONVALLARIA.§

Take of flowers of Convallaria	one part;
Boiling water	four parts.

Distil two parts.—Dose, from one to three ounces.

SPIRIT OF CONVALLARIA.‖

Take of Flowers of Convallaria	two parts;
Alcohol	one part;
Pure water	one part.

Distil one part.—Dose, from half an ounce to an ounce; usually employedexternally.

ETTMULLER'S CEPHALIC SNUFF.¶

Take of Flowers of Convallaria	one drachm;
Leaves of Marjoram	one drachm;
Essential oil of Marjoram	ten drops.

Mix them together, and form a snuff. If a stronger sternutatory be required, a scruple of white hellebore powder may be added; or, if the gratefulness of the smell be the object in view, a little Florentine orris-root in powder, or a few grains of musk and ambergris, may be employed.

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* Lewis; Mat. Med. p. 384.

† Senckenberg. Diss. de Lilio Conv. p. 32.

‡ Flore Economique, p. 165.

§ Codex. Medic. Paris, 1818.

‖ Pharmacopœia Saxonica, 1820.

¶ Ettmuller; Lib. et loc. cit.

CXX.

TILIA EUROPŒA

Common Lime or Linden-tree.

Class XIII. Polyandria.—*Order* I. Monogynia.

Nat. Ord. Tiliaceæ.

Gen. Char. *Calyx* five-parted, deciduous. *Petals* five, with or without a nectariferous scale at the base. *Fruit* coriaceous, five-celled, without valves; cells one to five, two-seeded.

Spec Char. Nectariferous scales wanting. Leaves twice the length of the petioles; cordate, glabrous, except a woolly tuft at the origin of the veins beneath. Cymes many-flowered. Fruit coriaceous, downy.

SYNONYMES.

Latin	Tilia fœmina, folio majore. *Bauh. Pin.* 426. Tilia fœmina. *Ger. Em.* 1483. *Lob. Obs.* 606. Tilia vulgaris platyphyllos. *Raii Hist.* 1694. *Syn.* 473. Tilia Europœa. *Lin. Sp. Pl.* 733. *Eng. Fl.* ii. p. 17. *Eng. Bot.* t. 610. Tilia intermedia. *Hayne and Svenk. Bot.* t. 40.
French	Tilleul; Tillau; Tillet; Tilier; Til.
Italian	Tiglio.
Spanish	Tilo; Tila; Tilia.
Portuguese	Til.
German	Linde; Lindenbaum.
Dutch	Linde; Lindeboom.
Danish	Lind; Lindtrœe.
Swedish	Linn.
Boh. Pol. & Russ.	Lipa.
Hungarian	Hars-fa.
Arabic	Uglamur.
Japanese	Badaisin.

Description.—Common Lime is a noble tree, often attaining the height of fifty or sixty feet: the bark is thick and fissured, the wood is light, and soft, and white ; the branches are numerous, smooth, somewhat angular when young. The leaves are cordate, acuminate, serrated, quite smooth above, glabrous beneath, except a woolly tuft at the origin of each vein, twice the length of the footstalks. The inflorescence is a stalked cyme, springing from the middle of a large, membranous, axillary, lanceolate, yellowish bractea, which falls off with the fructified cyme. The calyx is five-parted, deciduous ; the segments ovate, lanceolate, concave, and acute. The corolla is composed of five obovate spreading petals of a pale lemon colour, tapering into a short claw, without a scale at the base, rather longer than the calyx. The stamens are numerous, rather longer than the corolla, with erect, subulate filaments, and cordate yellow anthers. The germen is superior, globose, villous, five-celled, surmounted by a cylindrical, deciduous style, crowned by a sub-capitate stigma. The fruit is coriaceous, downy, oblong-turbinate, by abortion usually one-celled, and one or two seeded. Plate 30, fig 2, (*a*) entire flower magnified ; (*b*) fruit ; (*c*) transverse section of the same ; (*d*) seed.

This tree is a native of Europe generally, and is found in many parts of this country, in woody and hedge-rows, though probably not indigenous. It flowers in July.

The origin of the term *Tilia* is rather obscure ; some writers suppose that it is derived from πτελεα, an *elm*, in reference to the shape of the leaves ; according to others, it is an alteration of *telia*, from *telum*, a *dart*, in allusion to the use of the wood. None of the Greek writers mention this tree, except Theophrastus,* whose φιλυρα† is supposed to refer to it, on the authority of Pliny.‡ The Lime, Lin or Linden tree, was called *Lind*, in the Anglo-Saxon. The family-name of the illustrious Linnæus, or as he is termed in his native country, Linné, is said to have been derived from a famous Lime-tree which grew in the vicinity of the place where his ancestors resided.

Ten species of Lime-tree have been described, of which four are naturalized in Britain,—the subject of this article; T. rubra, *Dec.*; T. grandifolia, *Ehrh.*; and T. parvifolia, *Ehrh.*; the latter only, perhaps, indigenous.* Linnæus considered these as so many varieties of one species —the Tilia Europœa.

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* Hist. lib. iii. c. 10.

† Hence *philuræ* ; a term applied to the inner bark of various trees, used for paper or writing-tablets.

‡ Hist. Nat. lib. xvi. 5. 11.

This tree is much esteemed for forming avenues, and its fragrant flowers, "at dewy eve distilling odours," add greatly to the estimation in which it is held. Du Hamel states, that it was first cultivated for ornament, by the French, in the time of Louis XIV.; and, at Evelyn's suggestion, it was much employed in this way in England. Fenelon decorates his enchanted isle of Calypso with flowering Lime-trees.

General Uses.—The inner bark of the stem is tough and pliant, and is made into ropes; and the mats so frequently employed by gardeners, called *bass* or *bast,* which form one of the exports from Russia. "Excellent bass for tying plants may be obtained by placing the smooth, lateral branches of the tree in water, about April or Midsummer; when sufficiently macerated, they are taken out, and the bark, which easily separates from the alburnum, washed in water to make the glutinous matter separate, and hung up to dry, is then ready for use."†

A coarse but smooth paper may also be manufactured from the bark; and Ruger states, that, from the outer bark, he prepared a fine rose-coloured lake. With the twigs they make baskets and cradles. The wood being white, soft, smooth, and close-grained, and not liable to be worm-eaten, is much valued by carvers: many of Gibbons' exquisite productions in this material are extant, in various churches and palaces; as in the choir of St. Paul's, the Duke of Devonshire's at Chatsworth, Trinity College Library at Cambridge, &c. It is also used by shoemakers in cutting leather, as it does not blunt the knife; and is much sought after by turners, for making small bowls, boxes, and other articles of light ware; but vessels made of it, when turned thin, are not adapted for holding water, as it resembles ivy-wood in porosity. Lime-wood forms also excellent charcoal for gunpowder, and for painters' scribblets. The flowers, which are very fragrant, easily ferment, and might be used in making wine; a fine-flavoured brandy was distilled from them by Marcgraf;‡ they are much frequented by bees, and the finest honey in the world is obtained from Kowno in Lithuania, where there are large forests of this tree. The fruit or nut contains an oleaginous substance, and when roasted, has been proposed as a domestic substitute for chocolate. The sap of this useful tree abounds in mucilage, which by repeated boiling and clarification furnishes a kind of sugar; it may be procured by making incisions in the trunk and branches, as from the Birch, and by fermentation may be made into wine.

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* For the distinctive characters, see Hooker's British Flora, or Lindley's Synopsis of the British Flora.

† Don's System of Gardening and Botany, vol i. p. 552.

‡ In Mem. de l'Acad. de Science de Berlin, 1772, p. 4.

Excrescences or galls of a reddish colour, occasioned by an insect, (Cynips foliorum Tiliæ ?) are found on the leaves of this tree in the spring. Reaumur discovered that these were capable of furnishing a beautiful and durable red colour; he therefore recommends them as useful in dyeing.

The leaves are relished by cows, horses, goats, and sheep, and may be dried and preserved as winter fodder. In autumn, the milk of cows that feed upon them is reported to acquire a very unpleasant taste.

QUALITIES.—The flowers have a very sweet fragrant odour,* which is nearly dissipated in drying, and a faint, sweetish, subviscid taste. The petals assume a reddish hue when dried. The bark exhibits scarcely any sensible properties, except a slight bitterness. The aqueous infusion of the bark is of an orange-colour, and of an insipid, unpleasant taste and odour. The flowers yield the whole of their fragrance to water and spirit by distillation, but no essential oil has been obtained. The infusion of the recent flowers † is sweet and fragrant, with a slightly bitter taste; it receives a dark hue on the addition of sulphate of iron. The saturated infusion of the recently-dried flowers is mucilaginous, thick and filamentous, but appears limpid and diaphanous, and has similar qualities to the foregoing; on pouring alcohol into this infusion, a mucilage is precipitated.‡

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* Vicat states that two families, at Lausanne, were affected every summer with drowsiness and somnolency, from the odour of the flowers, which grew in a neighbouring avenue.

† When the anodyne and demulcent properties of the plant are required, the infusion should be made from the flowers alone. According to Host (Fl. Austr. 263), when the bracteæ and fruits are mixed with the flowers, the infusion becomes astringent. The same remark will apply to the distilled water, in preparing which, care should be taken that the petals be not bruised, and that the heat be moderate.

‡ Bergius; Mat. Med. tom. ii. p. 428.

Medicinal Properties and Uses.—The flowers of the Lime are supposed to have an anodyne and antispasmodic effect, and by the ancient physicians were esteemed peculiarly cephalic; hence employed by them in various diseases of the head, as apoplexy, vertigo, and the like. Mizaldus * and Paullinus † especially confirm the efficacy of the distilled water in the cure of epilepsy. Hoffmann ‡ too, asserts that he knew a case of chronic epilepsy cured by the use of an infusion of the flowers drunk as tea. Such, indeed, was the former exalted anti-epileptic reputation of the Lime-tree, that even epileptic persons sitting under its *shade*, were reported to be cured. That the flowers are manifestly useful in this terrible disease, numerous writers have confirmed.§ Hoffmann further adds, that the distilled water is good for all disorders attended with pain or spasms. French physicians are much in the habit of prescribing a decoction or infusion of these flowers in all nervous affections, and also in that kind of fever which succeeds to violent injury or to surgical operations. In these cases it appears to soothe and calm the irritation excited, and produces perspiration and sleep. The same may likewise be employed in hysteria, asthma, troublesome coughs, convulsions, and for the abdominal spasms of hypochondriacs.

All the plant, but especially the inner bark, contains a soft mucilage, void of all acrimony, which renders it, when macerated in water, an excellent application to burns and scalds, and for mitigating the pain of gouty and inflammatory swellings. The leaves reduced to ashes, and taken in doses of half a drachm, have been found to appease ardor urinæ.

INFUSION OF LIME FLOWERS.

Take of Lime flowers	two drachms;
Liquorice root	two drachms;
Boiling water	a pint and a half.

Infuse for a quarter of an hour. A pleasant mucilaginous drink, to be taken warm, in doses of from one to three ounces.

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* Cent. 9, Mem. Aphor. 25.

† Obs. 41, Cent. 1.

‡ Opusc. Med. p. 227.

§ "The juice, obtained by tapping the tree near the roots, in the spring, has obtained a great reputation for the cure of epilepsy, and we conceive it to be well worth the trial."—*Waller; Brit. Herb.* p. 224.

CXXI.

GLYCYRRHIZA GLABRA.

Common Liquorice.

Class XVII. DIADELPHIA.—*Order* IV. DECANDRIA.

Nat. Ord. LEGUMINOSÆ.

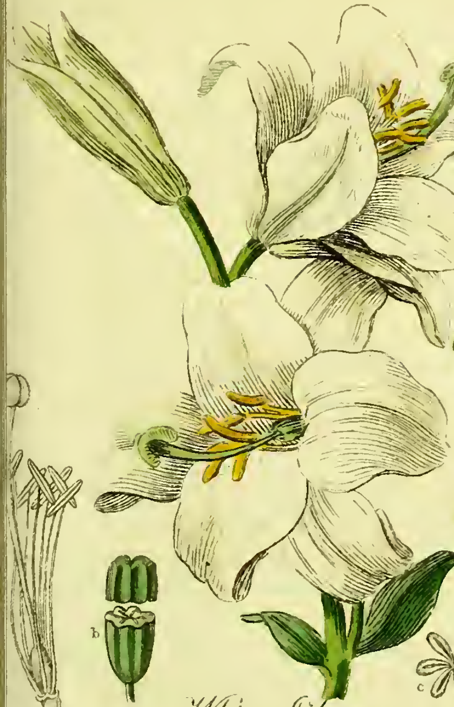
GEN. CHAR. *Calyx* tubular, five-cleft, bilabiate. *Vexillum* ovate-lanceolate, straight; *keel* two-edged or of two petals, straight, acute. *Legume* ovate or oblong, compressed, one-celled, one to four seeded.

SPEC. CHAR. Leaflets ovate, rather retuse, somewhat clammy beneath. Stipules wanting. Racemes shorter than the leaves. Legumes glabrous, three to four seeded.

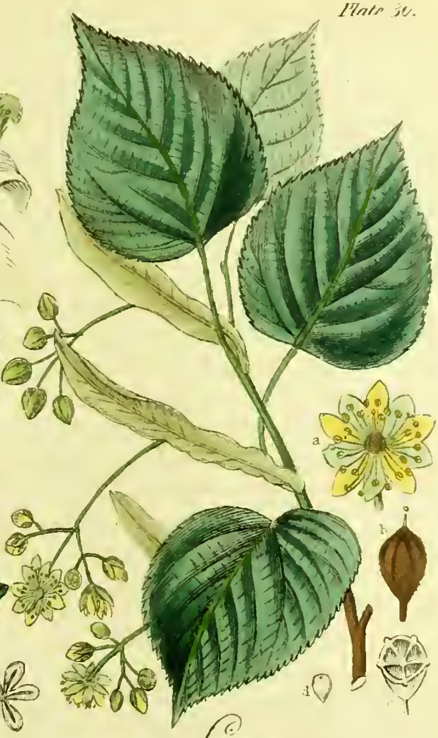
SYNONYMES.

Latin	Glycyrrhiza siliquosa vel germanica. *Bauh. Pin.* 352. Glycyrrhiza vulgaris. *Ger. Em.* 1302. *Raii Hist.* 90. *Dod. Pempt.* 341. Glycyrrhiza glabra. *Lin. Sp. Pl.* 1046. *Dec. Prod.* ii. p. 247. Glycyrrhiza lœvis. *Pall. itin ed. Gall.* append. no. 364. Liquiritia officinalis. *Mœnch. Meth.* 133.
French	Reglisse; Bois doux.
Italian	Regolizia; Legorizia; Liquirizia.
Spanish	Regalicia; Regaliz; Orozuz; Palo dulce.
Portuguese	Regaliz; Alcacaz.
German	Süssholz; Lakrizenholz.
Dutch	Zœthout.
Danish	Lakris.
Swedish	Lakrits.
Polish	Lakrycya.
Bohemian	Lekorice; Sladky koren.
Persian	Bikmekeh.
Javanese	Oyot manis.
Arabic	Ussulsus.
Chinese	Fan-chan-can-tsao.

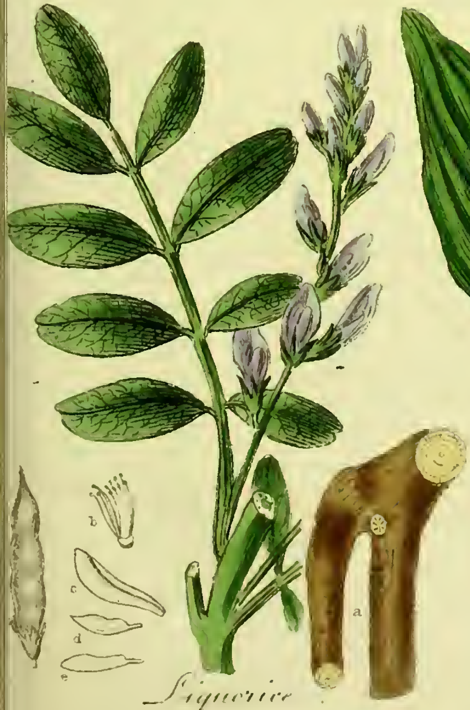
Plate 30.



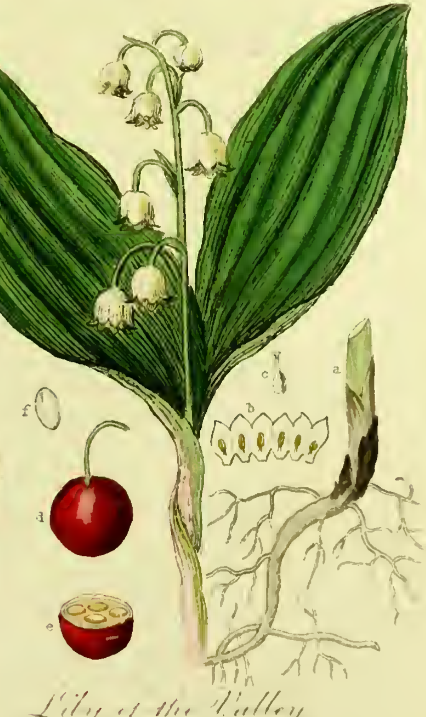
White Lily



Lime



Liquorice



Lily of the Valley

Description.—The root is perennial, long, cylindrical, branched, far spreading, about the thickness of a finger, reddish-brown externally, yellow and juicy within. The stems are erect, strong, smooth, branched, pale-green, and attain the height of three or four feet and upwards. The leaves are alternate, petiolate, pinnate, with from three to five pair of ovate, entire, obtuse leaflets, and a terminal one; the whole of a pale-green colour, and somewhat clammy beneath. The flowers are disposed in lax, axillary, spike-like racemes. The calyx is persistent, tubular, divided obliquely into two lips; the upper of four rather unequal segments, the lower simple and linear. The corolla is papilionaceous, pale purplish-blue; the vexillum or standard erect, lanceolate, concave; the alæ or wings, oblong, obtuse; the carina or keel of two distinct petals, furnished with a claw as long as the calyx. The filaments are ten; nine of them united at the base, tipped with simple roundish anthers. The germen is short, with a filiform style and an obtuse stigma. The fruit is a legume, smooth, oblong, compressed, acute, about an inch in length, one-celled, containing three or four small, reniform seeds.* Plate 30, fig. 3, (*a*) section of the root; (*b*) pistil and stamens; (*c*) vexillum; (*d*) ala; (*e*) keel; (*f*) legume.

The Liquorice plant is a native of the south of Europe, Syria and Persia, and is particularly abundant in moist situations, and on the margins of rivers. It was first cultivated in England in 1558. It flowers from June to September.

The generic name, from the Greek γλυκυρριζα, is compounded of γλυκυς, *sweet*, and ῥιζα, a *root*. Liquorice is said by Theis to be a corruption of the French *Reglisse*, which is also corrupted from Glycyrrhiza. Hippocrates mentions γλυκυριξα, and Theophrastus γλυκεια and σκυθικη, but from the description given by Dioscorides,† the plant used by the ancients would seem to be the *Glycyrrhiza echinata*, which is very common in the East, and resembles *G. glabra* in qualities, though said to be inferior to it.

Culture, &c.—"The soil most congenial to the growth of Liquorice is a deep sandy loam, trenched to the depth of two-and-half or three feet, and manured if necessary. The plants are procured from old plantations, and consist of the side-shoots, which have eyes or buds. The month of February or March, is preferred for planting. The plants are dibbled in the rows three feet apart, and from eighteen inches to two feet in the row, according to the richness or poverty of the soil. The after-culture consists of horse-hoeing and deep-stirring—in weeding, and removing the haulm every autumn, after it is completely withered."* At the end of three years, the plants are dug up for use. The whole roots are then washed, the fibres cut off, and the smaller roots separated from the larger ones; the former, termed the offal, are dried and ground to powder, the latter are packed up and sold to the druggist. The Liquorice-plant was formerly extensively cultivated near Pontefract, Yorkshire, and at Godalming, in Surrey, but the London market is now chiefly supplied from Mitcham.

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* The seeds are never perfected, and the plant seldom flowers in this country.

† Mat. Med. lib. iii. c. 17.

The extract of Liquorice is imported in large quantities from the south of Europe, under the name of *Spanish liquorice*, or *Spanish juice*. They first cut the root in pieces, then moisten and crush it in a mill; it thus forms a mass similar to dough, which is boiled for eight hours, and occasionally supplied with water. It is then twice pressed, to extract the mucilage, which is slowly evaporated to a proper consistence. When cool, it is cut into square cakes or cylindrical pieces, and packed in chests with bay-leaves. The refined Liquorice sold in the shops, in small cylindrical pieces about the size of a small quill, is a composition with mucilage of glue.

Qualities and general Uses.—" In domestic economy, the sound roots of the liquorice may be employed as stopples for wine or beer bottles, being more wholesome and durable than those made of cork." On account of the saccharine matter contained in the root, it is extensively employed in ale and porter brewing; and being not easily fermentable, unlike most other substances, it does not prevent their keeping. Böhmer even asserts, that sour ale or beer may be completely restored by suspending in the cask a linen bag containing Liquorice powder, with a small portion of chalk and potash.

The odour of the fresh root resembles that of the kidney-bean (*Phaseolus vulgaris*), and the taste is very sweet, and somewhat mucilaginous: the dried root is inodorous, with a similar flavour, leaving a slight degree of bitterness in the mouth when it is chewed without being peeled.† Its virtues are obtained by slight coction both in water and spirit. The aqueous infusion is inodorous, of a yellowish colour, and very sweet taste; it is rendered turbid by sulphate of iron. By much decoction it becomes somewhat acrid and nauseous. Alcohol extracts only the saccharine matter. The extract, according to Robiquet, contains an amlayceous fœcula, saccharine matter, *Glycion* or *Glycyrrhizin*, *Asparagin*, a resinous oil, phosphates and malate of lime and magnesia.

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* Don's Syst. Gard. and Bot. vol. ii. p. 226.

† The powder of Liquorice is said to be often adulterated with flour, and with other substances not so wholesome. This sophistication may be detected by the pale-yellow colour and reduced taste, as the genuine powder has a brownish-yellow colour, and a rich sweet taste.

MEDICINAL PROPERTIES AND USES.—The root of this plant is somewhat nutritive, and endowed with demulcent, incrassating, and temperating properties, all which it has enjoyed from the infancy of the science of medicine. Doubtless, to the latter virtue may be attributed its special reputation with the ancients of quenching thirst. Theophrastus, Dioscorides, and Pliny, employed it in dropsy, in which affection thirst is often a distressing symptom, but its efficacy in that malady is extremely doubtful. In the present day, and particularly on the Continent, it is extensively used in acute and chronic diseases as a necessary component of ptisans. In decoction, it is well adapted for nephritis, stranguary, and other diseases of the urinary organs; for apthæ, angina, diarrhœa; but more particularly in combination with various remedies for coughs, hoarseness, phthisis, and other pulmonary ailments. It is also administered in some cases of dyspepsia, where there is a deficiency of the natural mucus of the stomach. Finely powdered, it was once sprinkled over erysipelatous parts to absorb the serous discharge, and has frequently been employed to prevent friction, and the consequent inflammatory state of the skin to which infants are subject; but for these purposes it has given way to other means. The best form of employing Liquorice, is that of the purified extract; or, if an opiate be necessary to join with it, the following troches:—

LIQUORICE TROCHES WITH OPIUM.

Take of Opium	two drachms;
Tincture of Tolu	half an ounce;
Simple syrup	eight ounces;
Extract of Liquorice ..	five ounces;
Gum Arabic, powdered.	five ounces.

First triturate the opium with the tincture, then gradually add the extract, softened with hot water, the syrup, and the gum: finally, inspissate the mass, and form it into troches of ten grains each.—Dose, from six to ten during the twenty-four hours.

CXXII.

RUBIA TINCTORUM.

Dyers' Madder.

Class IV. TETRANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. RUBIACEÆ.

GEN. CHAR. *Calyx* an obsolete superior margin. *Corolla* rotate or campanulate, four or five parted. *Fruit* a two-lobed berry, nearly globose, one-seeded.

SPEC CHAR. Leaves four to six in a whorl; smooth above; their edge and keel beneath scabrous. Stem herbaceous, aculeate.

SYNONYMES.

Greek	ερυθροδανον; τευθριον.
Latin	Rubia tinctorum sativa. *Bauh. Pin.* 333.
	Rubia tinctorum. *Ger. Em.* 1118. *Raii Hist.* 480.
	Rubia major sativa sive hortensis. *Park Theatr.* 274.
	Rubia tinctorum. *Lin. Sp. Pl.* 158. *Lam. ill.* t. 60. f. 1.
French.....	Garance; Garence.
Italian	Robbia; Rubia.
Spanish....	Rubia.
Portuguese.	Ruida.
German ...	Krapp; Krappwurzel; Färberröthe.
Dutch	Krap; Meekrap.
Danish.....	Krap.
Swedish ...	Krapp.
Polish	Marzana.
Russ......	Mariona.

DESCRIPTION.—The root is perennial, long, cylindrical, creeping, jointed, branched, beset with small fibres, of a light or dusky-red colour externally, greyish-red or yellowish internally. The stems are annual, quadrangular, slender, procumbent, diffuse, and from two to three feet in length; their angles covered with short, rough, hooked points. The leaves are large, sessile, elliptical, lanceolate, of a shining cinereous green colour, and are arranged in whorls of four, five, or six together, at each joint of the stem; their margin and nerves covered with asperities. The flowers are disposed in small axillary and terminal panicles, upon branched peduncles. The calyx is small, and divided at the margin into four nearly obsolete teeth. The corolla is of a yellow colour, sub-campanulate, divided at the limb into four or five deep, ovate, acute segments. The stamens are equal in number to the corolline segments; the filaments short, tipped with elliptical anthers. The germen is two-lobed, nearly globose, with two short, slender styles, each terminated by a globose capitate stigma. The fruit is nearly globose, didymous, consisting of two bodies (*mericarps*), united by their inner face, of a dark-purple colour, juicy, each containing a single, ovate-globose seed, but one of them is generally abortive. Plate 31, fig. 1; (*a*) the root; (*b*) entire flower; (*c*) corolla opened to show the stamens; (*d*) pistil; (*e*) fruit.

This plant is a native of the Levant, the South of Europe, Caucasus, &c., and was cultivated in this country prior to the time of Gerard. It flowers in May and June.

There can be little doubt of this species of Madder being identical with the ερευθροδανον of Dioscorides* and of the other Greek writers. It was so called from ερευθος, *red*, in allusion to the colouring property of the roots; from which it has also obtained the appellation *Rubia*, from *ruber*, red.

Madder is extensively cultivated for the sake of its roots, which afford a valuable dye. This country is supplied chiefly from Holland and Flanders, and in part from France, Italy, and Turkey. Its culture has been attempted at different times in Britain, when our commerce with the Dutch was interrupted by political dissensions. The result of the trial has been, that it may be cultivated here to as great perfection as in any other country, but not at so low a price.†

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* Mat. Med. lib. iii. c. 160.

† For an account of the method of cultivating Madder, see Miller's Dictionary, art. Rubia.—Method of cultivating Madder, 4to. 1758, by Miller.—Don's System of Gardening and Botany, vol. iii. p. 643.

Qualities and general Uses.—The herbaceous part of Madder, cut in September, is reported to furnish excellent forage for cattle. The stem and leaves are used for polishing metals. The root, however, is by far the most valuable part of the plant. It dyes wool, silk, and cotton of a red colour, which, if not of the most brilliant kind, is so permanent as to resist the action of air and light, and is not easily washed out. When properly prepared, it is equal, if not superior, even to cochineal in colour. The most extraordinary property belonging to the Madder is that of tinging the bones of animals that feed upon it, of a red colour *. This colouration also extends to the urine, the fæces, the bile, the milk, the serum of the blood, according to Bohmer †; and Levret ‡ states that it sometimes tinged the excretion by the skin, and even the teeth §. It is remarkable, however, that the muscles, tendons, cartilages and membranes, are not affected. It appears that the solid or hardest part of the bones first receives the red colour, which gradually extends internally through the whole osseous substance, while the animal continues to take the Madder; but if it be alternately intermitted and employed, the bones are found to be coloured in a corresponding number of concentric circles. Experiments made upon dogs, swine, and poultry, tend to prove that animals fed exclusively on this root for several days or weeks, droop, languish, become emaciated, and at length die.

The root of Madder has a feeble, unpleasant odour, and a bitterish, somewhat styptic taste, "as it were drying." It imparts to water a deep red, and to alcohol a bright red tincture; and both taste strongly of the root. The aqueous infusion is scarcely affected by the acids, or a solution of alum, and assumes merely a brownish tinge by the addition of sulphate of iron.

When cold water is digested upon Madder it dissolves gum, sugar, yellow extractive, and free malic acid. The residue, boiled in water with a small addition of carbonate of soda, yields a dark red decoction, from which sulphuric

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* Mizaldus (Memorabil. centur. 7, aph. 91). It has been confirmed by numerous authorities, and a full account is given in Philos. Trans. vol. 39 and 41. Other plants of the natural order *Stellatæ*, produce a similar effect, as the root of *Galium verum*, *G. Mollugo*, *G. Aparine*, and *G. cruciatum*; *Asperula tinctoria*, &c.

† Diss. rad. Rub. Tinct. &c., p. 13.

‡ Sur les Accouchemens, p. 280.

§ Losecke Wahrnehm, p. 76.

acid throws down the red colouring matter; it may be purified by drying it upon blotting paper, and by solution in alcohol; to the filtered tincture a little carbonate of potass is added, to separate sulphuric acid, and when poured off from the precipitated sulphate of potass and evaporated, leaves the colouring principle in the form of a confused crystalline mass. From this colouring matter Colin and Robiquet have obtained a crystallizable substance, which they call *Alizarine*[*].

MEDICINAL PROPERTIES AND USES.—The most marvellous effects were attributed to the root of the Madder by the sages of old. Hippocrates[†], Dioscorides[‡], Galen[§], and Pliny[||], considered it capable of promoting the urine and menstruation, curing dysentery and jaundice, and of expelling the fœtus and secundines. Notwithstanding there are many respectable authorities in favour of it as a diuretic, Dr. Cullen[¶] denies it that property altogether. In jaundice, dysentery, and the atrophy of infants, its efficacy is extremely problematical, although for the first-named malady it was commended by Sydenham[**] and Hoffmann[††], and was an important ingredient in the once celebrated *Decoctum ad icteros*[‡‡]. Its virtues, as an emmenagogue, rest chiefly on the experiments of Dr. Home[§§], who gave from a scruple to half a drachm of the powder, or two ounces of the decoction, three or four times a day; subsequent trials lead us, however, to conclude, that its reputed action on the uterine organs rests on no better foundation than its imaginary influence over jaundice. Different authors also speak of it in obstinate coughs, chronic vomitings, and a variety of affections, in all which but little confidence can be granted it. From the colouring principle of this plant penetrating the osseous tissue and identifying itself as it were with the ultimate secretions of the fluids, many have prematurely concluded that it ought to possess prodigious influence over diseases of the bones, hence Glisson[*] and others mention it as an available remedy for rachitis, and even for giving stability to the union of fractures. On the contrary, Du Hamel states, that it renders the bones more fragile, and Bohmer and others assert, that young animals in particular are materially injured by being fed exclusively on this root for some days together[†].

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[*] Annales de Chim. et Phys. xxiv. 225. Quoted in Brande's Manual of Chemistry, 1836, p. 936.

[†] Lib. de victu acut., *ed. Foes.* p. 407.

[‡] Lib. 3. cap. 160.

[§] De simpl. Lib. 6. p. 818, *ed. Ricci.*

[||] Lib. 24. cap. 11. p. 1108, *ed. Dalech.*

[¶] Mat. Med. vol. ii. p. 39.

[**] Oper. L. B. 1741, p. 216, 218.

[††] Med. Syst. tom. iii. p. 542.

[‡‡] Pharm. Edinb. 1735, p. 68.

[§§] Clinical Experiments, p. 388.

Madder formed one of the five greater aperient roots, and was given in substance from half a drachm, and in decoction from one to four drachms, but it is almost entirely laid aside by practitioners of the present day.

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[*] Gliss. de rachit. p. 405.

[†] See the works already quoted.

CXXIII.

ADIANTUM CAPILLUS-VENERIS.

True Maidenhair.

Class XXIV. CRYPTOGAMIA.—*Order* I. FILICES.

Nat. Ord. FILICES.

GEN. CHAR. *Sori* inserted into the involucre, contiguous, oblong, or roundish. *Involucre* membranous, arising from distinct portions of the margin of the frond, turned in, opening inwards.

SPEC. CHAR. Frond bipinnate; pinnules stalked, obovate-cuneate, lobed, segments of the fertile pinnules terminated by a linear-oblong sorus, sterile ones serrated.

SYNONYMES.

Greek....	*αδιαντον.*
Latin....	Adiantum foliis coriandri. *Bauh. Pin.* 355. Capillus Veneris verus. *Ger. Em.* 1143. *Raii Syn.* 123. Adiantum. *Fuchs.* 85. c. 28. *Dod. Pempt.* 466. Adiantum Capillus-Veneris. *Lin. Sp. Pl.* 1558. *Eng. Fl.* iv. p. 321. *Eng. Bot.* t. 320.
French. ..	Capillaire; Capillaire de Montpellier; Capillaire vrai; Cheveu de Venus.
Italian. ..	Adianto; Capillare; Capelvenere; Capelvenero.
Spanish ..	Culantrulo de pozo.
Portuguese	Adianto.
German..	Frauenhaar; Venushaar.
Dutch....	Vrowen-hair; Venus-hair.
Bohemian.	Zensky wlas.

DESCRIPTION.—The root (*rhizoma*) is perennial, oblique, three or four inches in length, about the thickness of a quill, of a brownish colour, clothed with shaggy hairs, sending out here and there very slender fibres constituting the true root. The stem or stipes is erect, filiform, smooth, of a purplish shining black colour, and rises to the height of five to twelve inches. The leaflets are alternate, petiolate, of a delicate green colour, the lowermost pinnate, wedge or fan-shaped, smooth, thin, veiny, unequally lobed; the sterile ones serrated. The fructification is composed of small linear masses, called sori, consisting of a congeries of capsules, arising from distinct portions of the margin of the frond turned in, opening inwards, and which serve as an involucre. Each capsule contains several minute sporules. Plate 31, fig. 3, (*a*) leaflet, magnified; (*b*) summit of the leaflet turned back to show the capsules, magnified; (*c*) capsule magnified.

This delicate and graceful fern is very common in the south of Europe, in stony, moist, and shady places, especially by the sides of springs and the inside of wells. It is rare in this country, being only found in a few localities, such as the South Isles of Arran, Galloway, Ireland; Barry Island and Port Kirig, Glamorgan; and by the Carron, Kincardineshire. The fructification is produced from May to September.

The generic name is derived from αδιαντος, *dry;* because it is not affected by the water which trickles upon its leaves. In vain, says Pliny, you plunge the Adiantum in water, it always remains dry. The specific name, Capillus Veneris, *Venus' hair*, according to Pliny, refers to the property attributed to this plant, of strengthening and embellishing the hair: others suppose that it alludes to the elegant and shining stems. The English term, *Maidenhair*, has a similar meaning.

Nearly eighty species of Adiantum have been described. The Canadian Maidenhair* (*A. pedatum*) is sometimes used in medicine, and has similar properties to the *A. Capillus-Veneris.* The plant sometimes called Common Maidenhair, more correctly termed Wall Spleenwort (*Asplenium Trichomanes*), is occasionally substituted for the true Maidenhair.

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* This plant is said to be so abundant in some parts of Canada, that it is used for packing merchandize instead of hay. It has a more pleasant and powerful aroma than the European kind. Dr. Ainslie says that a strong decoction of it is a certain emetic, and that the *A. melanococcum*, an Indian species, is reputed to be tonic. Thunberg (Diss. de medicina Afric. p. 4.) states that the *A. æthiopicum* is used medicinally at the Cape of Good Hope.

QUALITIES.—Maidenhair has an agreeable though feeble aroma, and a slightly bitter styptic taste. Water abstracts its virtues completely, and the infusion or decoction yields, when evaporated, an astringent, bitterish, mucilaginous extract. Alcohol takes up the odour and flavour of the leaves, and but little of the mucilage: the tincture has a fine green colour.

MEDICINAL PROPERTIES AND USES.—The medicinal virtues of this plant are not very obvious; nevertheless, as an ordinary demulcent and expectorant, it may be given in catarrh, dry cough, and other pulmonary affections. A syrup of Maidenhair is imported from France in large quantities, under the name of *Capillaire*. This syrup, freely diluted with water, makes a very agreeable drink for invalids, and in its pure state, taken in small and repeated doses, it frequently lessens the tightness and violence of chronic coughs, and it is not without effect in allaying that uneasy sense of tearing in the larynx and pharynx to which some persons are liable.

The following may be conveniently substituted for the foreign preparation:—

SYRUP OF MAIDENHAIR[*].

Take of	Leaves of Maidenhair	six ounces;
	Liquorice root	two ounces;
	Boiling water	two pints.
Infuse for an hour, then pour off the clear liquor, and add		
	Refined sugar	four pounds;
	Orange-flower water	two ounces.
Gently boil, until of a proper consistence.		

Dose, from two drachms to an ounce.

The simple infusion of the plant in water, sweetened in the manner of tea, may be used for the same purposes as the syrup of Maidenhair.

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[*] This syrup is said to be imitated by fraudulent persons, by mixing mucilage of gum arabic with sugared water.

CXXIV.

ORIGANUM VULGARE.

Common Marjoram.

Class XIV. Didynamia.—*Order* I. Gymnospermia.

Nat. Ord. Labiatæ.

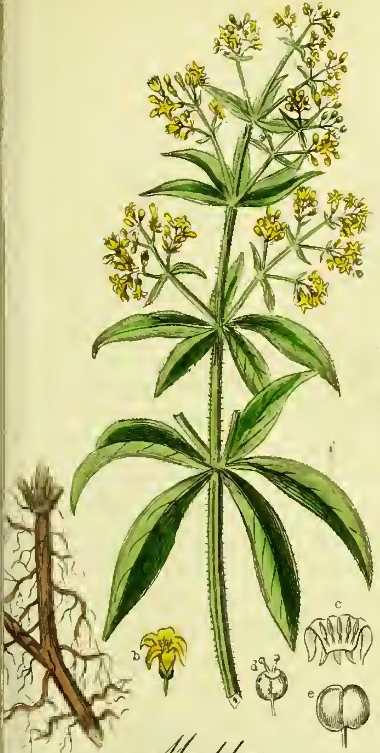
Gen. Char. *Spikes* four-sided, resembling a catkin, imbricated with bracteæ. *Calyx* various. *Corolla* with the upper lip erect, nearly flat; lower lip patent, trifid.

Spec. Char. Spikes (or heads) of flowers roundish, panicled, crowded, glabrous. Bracteæ ovate, longer than the calyx. Leaves ovate, entire.

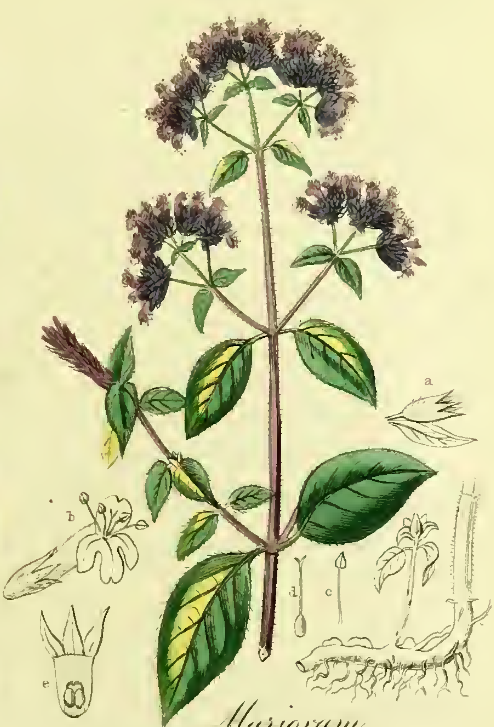
SYNONYMES.

Greek....	οριγανος.
Latin....	Origanum sylvestre. *Bauh. Pin.* 223. Origanum Anglicum. *Ger. Em.* 666. Origanum vulgare spontaneum. *Raii Syn.* 236. Marjorana sylvestris. *Park. Theatr.* 12. Origanum vulgare. *Lin. Sp. Pl.* 824. *Eng. Fl.* iii. p. 106. *Eng. Bot.* t. 1143.
French. ..	Origan; Origan commun.
Italian....	Origamo; Origano.
Spanish ..	Oregano.
Portuguese	Ouregao; Ouregos.
German ..	Gemeine Dost; Dosten-kraut; Wohlgemuth.
Dutch....	Wilde Orego; Wilde Majolein.
Danish. ..	Tost; Vild Mairan.
Swedish ..	Dosta.
Polish ...	Lebiotka.
Russ.	Duschiza.
Bohemian.	Dobra myssl.

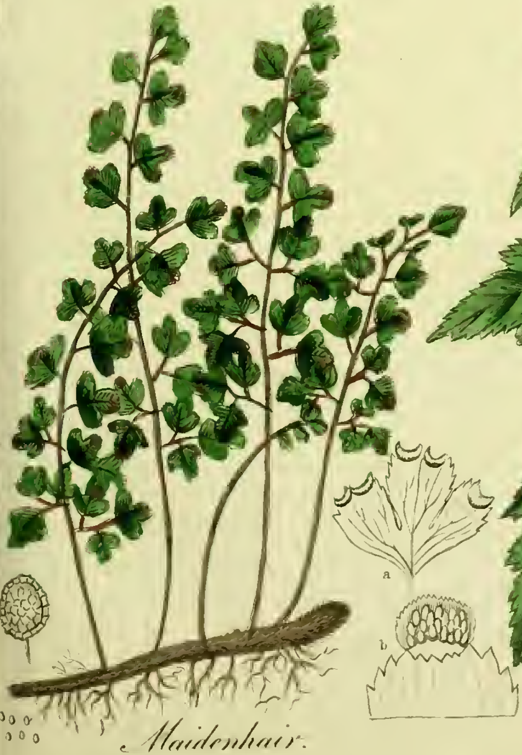
Plate 31.



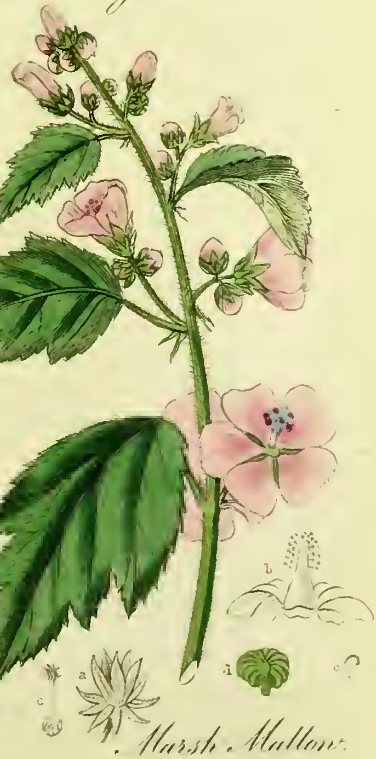
Madder.



Marjoram.



Maidenhair.



Marsh Mallow.

Description.—The root is perennial, creeping, and furnished with numerous slender fibres. The stems are erect, leafy, quadrangular, purplish, clothed with short recurved downy hairs, dichotomously branched towards the top, and from twelve to eighteen inches in height. The leaves are opposite, petiolate, ovate, entire, or very slightly serrate, fringed with short hairs, smooth, and of a deep yellowish green above, paler and somewhat downy beneath. The flowers are axillary and terminal, in dense panicled spike-like heads; each flower is subtended by an ovate-oblong, brownish purple, sessile bractea, longer than the calyx. The calyx is cylindrical, striated, the mouth of the tube closed with whitish hairs, the limb divided into five nearly equal, purplish teeth. The corolla is bilabiate, of a light purplish rose colour, the tube enlarged upwards, longer than the calyx; the upper lip erect, bifid, obtuse; lower lip patent, with three nearly equal rounded lobes, the middle lobe crenate. The stamens are didynamous, erect, two rather longer than the corolla, with ovate two-lobed anthers. The germen is four-parted, with a filiform style, and a bifid, acute, revolute stigma. The fruit consists of four ovate nuts or achenia, situated in the bottom of the persistent calyx. Plate 31, fig. 2, (*a*) calyx and bractea, magnified; (*b*) entire flower, magnified; (*c*) stamen; (*d*) pistil; (*e*) section of the calyx to show the nuts.

This plant is a native of Europe, and occurs not unfrequently in Britain, in dry hilly and bushy places, especially in a calcareous soil. It flowers in July and August.

The generic name is derived from οριγανον, from ὄρος, *a mountain*, and γάνος, *joy;* these plants may truly be called the joy of the hilly and romantic places in which they grow. Bauhin considers the Origanum vulgare as the *Cunilla bubula* of Pliny. The common name, Marjoram, is thought to be derived from *Marjamie*, (or *Maryamych*,) the Arabic name for this plant.

There are several foreign species of Marjoram, some of which have been used in medicine, as the Dittany of Crete, (*O. Dictamnus*,) and the Cretan Marjoram, (*O. Creticum.*) The sweet Marjoram, (*O. Marjorama*,) is well known in the gardens of this country, being frequently used for culinary as well as medicinal purposes. It is specifically distinguished from the wild kind, by its roundish, thin, compact spikes, and more elliptical leaves, as well as by its general habit: it possesses similar properties, and the one may always be substituted for the other.

QUALITIES AND GENERAL USES.—The dried leaves of this plant are very grateful, and have been recommended as a substitute for tea. They may also be employed like the sweet Marjoram for culinary purposes, to give relish to soups, omelets, stuffings, &c. The plant deserves a place in gardens by the side of *O. Majorana*, and it is easily propagated by the seeds or by slips. The country people use the flowering tops to dye linen cloth purple; for this purpose it should be previously steeped in alum water, and then immersed for forty-eight hours in a decoction of the bark of the crab tree. The herb also imparts a bright reddish brown colour to wool, especially if the latter be frequently taken out of the liquor and properly beaten. The dried plant suspended in a cask of beer is said to prevent or correct the acidity of that liquor *. According to the Swedish experiments, goats and sheep eat it, horses are not fond of it, and kine refuse it.

The leaves and flowering tops have an agreeable aromatic smell, resembling that of Wild Thyme, and a warm, pungent, somewhat acrid taste. Water extracts these qualities by infusion, and by distillation with that fluid, a moderate quantity of very acrid penetrating oil is obtained. It also affords camphor like many other Labiatæ, and a gum-resinous extractive matter, in great part soluble in water, to which it imparts a red colour.

MEDICINAL PROPERTIES AND USES.—Common Marjoram has tonic, stimulant, and carminative properties, hence it has been much lauded in asthma, coughs, and various spasmodic affections. It has also been considered resolutive, sudorific, diuretic, and emmenagogue, but without much claim to some of these appellations. As a tonic and stomachic it may be useful in obstructions of the lungs, or superabundance of mucous secretions, where there is no fever or irritation, and in many of those diseases called nervous.

Externally it has been particularly recommended in fomentation, or applied in little bags to indolent tumours and swellings, and either in fomentation or baths against rheumatism, obstructions of the viscera, &c. In the form of a pediluvium or foot-bath, it was once thought very efficacious in suppressed menstruation. For these purposes it might be combined with chamomile flowers, thyme, rosemary, &c.

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* "If it be added towards the close of the fermentation, it renders the ale or beer more intoxicating."—*Lin. Fl. Suec.* 534.

The tops dried and powdered may be given in the dose of one or two scruples. The infusion, or tea, which has been much praised in flatulence, head-ache, and in nervous and hysterical complaints, is made with half an ounce of the dried herb to a pint of boiling water, which may be taken at intervals during the day. The volatile oil dropped upon cotton, has been used to assuage the pain of carious teeth, and Lange * even asserts its efficacy in caries of the bones. The powder of the dried leaves and tops is a pleasant errhine, and enters into some cephalic snuffs.

* Brunsv. Domest. p. 249.

CXXV.

ALTHÆA OFFICINALIS.

Common Marsh-Mallow.

Class XVI. MONADELPHIA.—*Order* III. POLYANDRIA.
Nat. Ord. MALVACEÆ.

GEN. CHAR. *Styles* numerous. *Calyx* double; exterior of six to nine segments. *Capsules* numerous, arranged in a circle, one-seeded.

SPEC. CHAR. Leaves soft and tomentose on both sides, cordate or ovate, toothed, entire, or three-lobed. Peduncles axillary, many-flowered, much shorter than the leaves.

SYNONYMES.

Greek....	*ἀλθαία ; ιβισκος.*
Latin....	Althæa Dioscoridis et Plinii. *Bauh. Pin.* 315. Althæa vulgaris. *Raii Syn.* 252. *Park. Theatr.* 303. Althæa. *Fuchs.* 15. *Cam. Epit.* 667. Althæa officinalis. *Lin. Sp. Pl.* 966. *Eng. Fl.* iii. p. 244. *Eng. Bot.* t. 147.
French. ..	Guimauve.
Italian. ..	Malvavischio ; Bismalva ; Altea.
Spanish ..	Malvavischo ; Altea.
Portuguese	Althea ; Malvaisco.
German ..	Eibisch ; Ibisch.
Dutch....	Heemst ; Heems-wortel.
Danish. ..	Ibisk ; Althee.
Swedish...	Alterot.
Polish....	Slaz wloski.
Russ.	Podswonok.

DESCRIPTION.—The root is perennial, thick, cylindrical, tapering, whitish, somewhat ligneous, furnished with many strong fibres. The stems are annual, erect, cylindrical, leafy, and downy; branched towards the top, and from two to three feet in height. The leaves are alternate, petiolate, about two inches in length, broadly ovate, somewhat cordate, with from three to five angular lobes, plaited, unequally serrate at the margin, and with two stipulæ at the base of each footstalk: they are soft to the touch, being covered with a very dense, velvety, stellate pubescence. The flowers are nearly sessile and combined into small panicles, proceeding from the axils of the upper leaves. The calyx is double, the outer (involucre?) consists of six to nine deep segments; the inner has five broader concave divisions. The petals are five, obcordate, emarginate, twice as long as the calyx, unguiculate, of a light roseate colour marked with deeper veins. The filaments are numerous, white, connected at the base into a cylindrical column, free above, tipped with reniform one-celled anthers. The germen consists of several carpels dispossd in a circle, with a cylindrical style, terminated by numerous subulate stigmas. The fruit is composed of numerous (about twenty) carpels or capsules, arranged in a circle round the base of the style, depressed, each containing a single reniform compressed brown seed. Plate 31, fig. 4, (*a*) the double calyx; (*b*) section of corolla and staminiferous column; (*c*) pistil; (*d*) orbicular depressed fruit, from which one of the capsules has been removed; (*e*) capsule, isolated.

Common Marsh-Mallow is a native of the greater part of Europe, and abounds in this country in marshes, especially towards the sea-coast. It flowers in August and September.

This plant is in all probability the αλθαια and ιβισκος of Dioscorides; the former from which the generic name is derived, comes from αλθος, *a remedy*, in allusion to the eminent medicinal properties of the Mallow. Hence also the old names Vismalva, Bismalva, Malvaviscus, &c.* The French name *Guimauve*, signifies Viscous Mallow.

The Hollyhocks (Alcea, *Linn.*) are now generally united with Althæa, otherwise it is not a large genus. The only British species besides the one here described is the *Hispid Marsh-Mallow*, *(A. hispida,)* distinguished by its cordate rough leaves, hispid stems, and single-flowered peduncles. The common Mallow (*Malva sylvestris*) in general aspect much resembles the Marsh-

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* It is also supposed to be the *hibiscus* mentioned by Virgil:—

—— "gregem viridi compellere hibisco."—*Ecl.* ii. v. 30.

Mallow, but it is generically distinct by its three-leaved exterior calyx. It grows abundantly by every road-side, and its large purple flowers appear in profusion from May to September, and are followed by its curious fruit, called by children *cheeses*. It has similar though somewhat inferior properties to the Marsh-Mallow; being a much more common plant, however, and more easily procured, it affords a convenient substitute.

QUALITIES.—The root of Marsh-Mallow is about the thickness of the finger, covered with a greyish epidermis, white internally: inodorous, sweetish and very mucilaginous when masticated. It contains more than half its weight of sweet and viscous mucilage, which is also found in the other parts of the plant, but in much less quantity. This mucilage is easily obtained by decoction in water, and it precipitates on cooling into a semi-transparent trembling yellowish jelly. Leo Meyer found in the dried root, mucilage with malic acid and several salts, sweet extractive matter, starch, inulin, and woody fibre. The supposed principle named *Althein* proves to be *Asparagin*, which exists in the root in small quantity.

MEDICINAL PROPERTIES AND USES.—The earliest medical authorities highly extol the virtues of this plant. Dioscorides * recommends it in many of the diseases against which it is employed in the present day. Pliny † states, that Hippocrates administered the decoction of the root to those labouring under loss of blood, asthma, or dysentery, and that he also applied it to contusions and lacerations of the muscles, nerves, &c. It has been considered emollient, demulcent, lubricating, and anodyne, and has consequently been employed for allaying heat and irritation, and to diminish the pain of inflamed parts. The infusion or decoction has been specially recommended in the first stage of acute phlegmasiæ, in active hemorrhages, pulmonary catarrhs, hoarseness, pleurisy, diarrhœa, dysentery, nephritis, blenorrhagia, &c.; also, for relieving the strangury occasioned by cantharides or calculi, and in cases of poisoning by acrid or corrosive substances. Externally it is employed in numerous affections; in decoction as a fomentation for the eyes in acute ophthalmia, in external abrasions and in cutaneous eruptions accompanied with a sharp ichorous discharge; as a gargle in affections of the gums, aphthæ, and sore throat. In the form of lavement it is very useful in dysentery, diarrhœa, peritonitis, and inflammation of the bladder. "Fomentations made with the decoction, or cataplasms prepared with the mucilage combined with amylaceous fecula, are applied with the best effects to inflammatory tumours, to wounds and ulcers when the surface is dry and painful, to burns, tetters, and other local affections accompanied with heat, tension, and pain."*

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* Mat. Med. lib. iii. c. 163.

† Hist. lib. 20. c. 21.

The root, being the most abundant in mucilage, is generally preferred to the other parts of the plant. For infusion or decoction, from two to four drachms may be added to a pint of water. In fomentations and cataplasms it may be used alone, or combined with mullein leaves, chamomile flowers, &c. Its pectoral effects may be increased by the addition of liquorice, elecampane, ground-ivy, coltsfoot, or mullein.

SYRUP OF MARSH-MALLOW †.

Take of Marsh-Mallow root, bruised	eight ounces;
Refined sugar	two pounds;
Water	four pints.

Boil down the water with the root to one-half, and press out the liquor when cold. Set it by for twenty-four hours that the dregs may subside, then pour off the liquor, and having added the sugar, boil down to a proper consistence.

DECOCTION OF MARSH-MALLOW ‡.

Take of Marsh-Mallow root, dried and bruised	four ounces;
Raisins stoned	two ounces;
Water	seven pints.

Mix them and boil down to five pints; strain the liquor and set it aside that the fæces may subside, and then decant.

This is a useful demulcent in the dose of a cupful frequently taken.

MARSH-MALLOW LOZENGES §.

Take of Marsh-Mallow root, powdered	one ounce and a half;
White sugar	four ounces and a half;
Mucilage of tragacanth	a sufficient quantity.

Make into lozenges. Iris root or orange-flower water may be used to give them a pleasant aroma.

These lozenges are very useful in hoarseness, cough, &c.

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* Flore Med. tom. iv. p. 91.

† Syrupus Altheæ, *Pharm. Lond. et Dubl.*

‡ Decoctum Altheæ Officinalis. *Pharm. Ed.*

§ Codex. Med. Gall.

CXXVI.

PEUCEDANUM OSTRUTHIUM.

Great Masterwort.

Class V. Pentandria.—*Order* II. Digynia.

Nat. Ord. Umbelliferæ.

Gen. Char. See *Hog's-Fennel* (Peucedanum Officinale).

Spec. Char. Leaves biternate; leaflets broadly ovate, lobed, inciso-serrate, unequal at the base; sheaths very large. Fruit, with a very broad margin.—General involucre wanting.

SYNONYMES.

Latin	Imperatoria. *Bauh. Pin.* 156. *Ger. Em.* 1001. *Raii Hist.* 436. *Park. Theatr.* 942. Smyrnion. *Trag.* 433. Imperatoria Ostruthium. *Lin. Sp. Pl.* 371. *Eng. Fl.* ii. p. 78. *Eng. Bot.* t. 1380. *Dec. Prod.* iv. p. 183. Selinum Imperatoria. *Roth. Germ.* i. 133. *Crantz. Aust.* 1746. Peucedanum Ostruthium. *Koch. Umb.* 95.
French...	Imperatoire.
Italian. .. *Port. and*. *Spanish* ..	Imperatoria.
German ..	Meisterwurz; Kaiserwurzel; Ostranz.
Dutch....	Meesterwortel.
Danish. ..	Mesterurt.
Swedish ..	Masterot.

Description.—The root is perennial, thick, fleshy, knotted, nearly tuberous, beset with long creeping fibres. The stem is cylindrical, thick, fistulous, striated, erect, nearly simple, and from one to two feet in height. The leaves are alternate, petiolate, the lower ones biternate, the upper less compound;

leaflets broad, ovate, lobed, incised, serrate, of a deep green colour, with large dilated membranous sheaths at the base of the petiole. The flowers are disposed in large compound plano-concave umbels, without an involucre; the umbellules have an involucre of several straight subulate leaves. The calyx is an obsolete margin. The corolla is small and whitish, composed of five obcordate, equal petals, incurved at the point. The stamens are five, with subulate, erect, white filaments, longer than the corolla, and roundish double anthers. The germen is inferior, roundish, striated, truncate, surmounted by two subulate spreading styles, terminated by an obtuse stigma. The fruit is lenticular, compressed, girt with a membranous margin, consisting of two carpels or mericarps, each with three distinct intermediate ridges, the lateral ones obsolete, containing a single seed, compressed on its inner face. Plate 32, fig. 1, (*a*) entire flower, magnified; (*b*) pistil, natural size; (*c*) fruit, magnified.

This plant is found in mountainous and hilly pastures in the temperate parts of Europe, and in moist meadows and woods in this country, though by no means frequent; and as it generally occurs near ancient residences, it is probably not indigenous. It is cultivated in gardens. It flowers in June and July.

The generic name is derived from πευκη, *a pine*, and δανος, *dwarf*, on account of the gum-resin afforded by some of the species. The former name, *Imperatoria*, of which there are synonymes in nearly all the European languages, refers to its imperial and super-eminent qualities.

Qualities.—The root is somewhat tuberous, marked with annular furrows and ridges, of a greyish brown externally, white within; on being cut in its recent state it exudes a yellowish white, bitter, acrid milk. In its recent state, it has a powerful aromatic odour and a pungent, bitter, disagreeable taste; when masticated it bites the tongue, and causes a sensation of heat in the fauces. By infusion in water its aromatic qualities are obtained, which are nearly carried off by evaporation, leaving a nauseous, bitter, slightly acrid extract. Its odour is also preserved when the root is digested in alcohol, and the tincture has the warmth, pungency, and bitterness of the substance itself; and these properties are concentrated in the deep yellow extract obtained by evaporating the spirituous menstruum.

Medicinal Properties and Uses.—This plant appears to be unduly neglected in the present day. The root is a useful aromatic tonic and stimulant, and has much analogy with Angelica. By the ancients * it was considered stomachic, diuretic, diaphoretic, sialogogue, expectorant, and emmenagogue. Forestus † speaks of its efficacy in hysteria, and Hoffmann ‡ had such an high opinion of its virtues, that he calls it a *divine remedy* in colics and flatulencies; he also praises its effects in paralysis, apoplexy, suppression of the menses, dropsy, and intermittent fevers. Lange § also attributes to it equal efficacy with bark in intermittent, especially quartan fevers. Decker ‖ used it with success against paralysis of the tongue, and Cullen considers it a useful masticatory in tooth-ache. Chomel ¶, moreover, recommends the decoction in retention of urine and nephritis. Externally, the powdered root has been sprinkled upon foul atonic ulcers to promote their cicatrization, and S. Pauli made an ointment of it with lard, which he used in the treatment of some cutaneous affections, as ringworm.

The root may be given in substance to the amount of one to three scruples, and to form an infusion, twice this quantity should be employed. The infusion in wine is reported to have cured agues, and the alcoholic tincture is well deserving of trial in some of the above mentioned diseases.

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* The high opinion once entertained of its efficacy against the plague, venomous bites, and mortal poisons, may justly create a smile. Gerard is very careful to inform us, that "*Imperatoria* is not only good against all poison, but also singular against all corrupt and naughty aire and infection of the pestilence, if it be drunken with wine. The roots and leaves stamped, dissolve and cure pestilentiall carbuncles and blotches. It greatly helpeth such as have taken great squats, bruses, or falls from some high place. The root with his leaves stamped, and laid vpon the members infected, cureth the bitings of mad dogs, and all other venomous beasts."—*Herb. em.* 1001.

† Opera, lib. xxviii. obs. 32.

‡ Officin. lib. iii. c. 116.

§ Domest. p. 141.

‖ Exercit. Med. Pract. p. m. 100.

¶ Usuelles, tom. i. p. 553.

CXXVII.

SPIRÆA ULMARIA.

Meadow-Sweet, or Queen of the Meadows.

Class XIII. Icosandria.—*Order* II. Pentagynia.
Nat Ord. Rosaceæ.

Gen. Char. See *Dropwort* (Spirea Filipendula).

Spec. Char. Herbaceous. Leaves interruptedly pinnate, serrated, downy beneath; terminal leaflet largest, three-lobed. Flowers in compound cymes.

SYNONYMES.

Latin	Barba Capræ floribus compactis. *Bauh. Pin.* 164. Regina prati. *Ger. Em.* 1043. *Dod. Pempt.* 57. Ulmaria. *Raii Syn.* 259. Ulmaria vulgaris. *Park Theatr.* 592. Spiræa Ulmaria. *Lin. Sp. Pl.* 702. *Eng. Fl.* ii. p. 368. *Eng. Bot.* t. 960. Ulmaria palustris. *Mœnch. Meth.* 663.
French	Reine-des-pres.
Italian	Regina degli prati.
Spanish....	Reyna del prado; Ulinaria.
Portuguese.	Rainha dos prados.
German ...	Wiesenköniginn; Geisbartwurzel; Sumpfspierstaude.
Dutch	Reynette; Geitenbaard.
Danish	Miedurn.
Swedish ...	Miœert.
Polish	Rosia brodka.

Description.—The root is perennial, cylindrical, furnished with numerous fibres, of a dark brown externally, reddish or yellowish within. The stem is erect, simple, branched upwards, leafy, angular, smooth, of a pale green colour, purplish below, and attains the height of three or four feet. The leaves are alternate, petiolate, interruptedly pinnate; the leaflets opposite, sessile, ovate-oblong, acuminate, smooth above, downy beneath, toothed and serrated at the margin; the terminal leaflet very large, three-lobed, with roundish acute stipulæ at the base, joined to the petiole. The flowers are disposed in large, terminal, compound cymes, and have a hawthorn-like fragrance. The calyx is campanulate, five-cleft, with ovate, obtuse, concave, reflexed segments. The corolla is composed of five obovate, roundish, unguiculate, yellowish white, spreading petals. The stamens are numerous, with setaceous filaments inserted into the calycine disk; and ovate, obtuse, innate, two-celled anthers. The germens, or ovaries, are about eight in number, obovate, obtuse, smooth, and compressed; each terminated by a clavate, elongated, reflexed style, and a capitate pendulous stigma. The fruit consists of as many capsules or carpels as there are ovaries, erect, glabrous, twisted, one-celled, two-valved, few-seeded. Plate 32, fig. 3, (*a*) entire flower; (*b*) petal; (*c*) calyx and stamens, the petals removed; (*d*) pistils; (*e*) carpel.

This plant is a native of Europe and Siberia, and abounds in this country in moist meadows, and upon the banks of rivers, ditches, and ponds. It flowers from June to August.

The generic term has been already explained. The specific name from *ulmus, an elm,* refers to the elm-like shape and appearance of the leaves. It has received the English names of Meadow-Sweet, Mead-Sweet, and Queen of the Meadows, from the beauty and fragrance of the blossoms. Some of the foreign synonymes signify *goats-beard,* also alluding to the flowers.

QUALITIES AND GENERAL USES.—The flowers infused in ale or wine, impart a very agreeable flavour, and infused in mead they are said to give it the aroma of the Greek wines. The roots are very astringent, and have been strongly recommended for tanning leather. According to Bryant, the Russians prepare a kind of granulated flour from these roots, possessing nutritious qualities. Olaffen states that the Icelanders obtain a durable black colour from a decoction of the whole plant. The scent of the flowers is reputed to drive away noxious insects from granaries. The foliage is eaten by goats, sheep, and swine; but refused by horses and cows.

The root has a weak smell, and a styptic, astringent taste. The infusion is of a reddish colour, heavy odour, and styptic taste, and is quickly rendered black by sulphate of iron. The herbaceous part of the plant, when rubbed or chewed, manifests a sub-astringent, bitterish, somewhat aromatic, and pleasant taste. The recent flowers have a strong fragrant odour, analogous to that of almonds, but which becomes unpleasant on too near approach; the aqueous infusion has a similar odour, and a bitterish taste, and the fragrance comes over in the distilled water, which is a very agreeable perfume.

An essential oil, possessed of peculiar properties, is obtained from the flowers by distillation in water. Dr. Löwig has made some researches on this oil, which are very interesting in a chemical point of view. He first distils the flowers in the usual manner, and then submits the product to a re-distillation till about one-fifth is come over into the receiver. A concentrated aqueous solution of the oil is thus obtained, and the oil itself, though only in very minute quantities. The oil is heavier than water, is of a light yellow colour, and possesses the odour of the blossoms in a very eminent degree. It mixes in all proportions with alcohol and æther, and is slightly soluble in water. The aqueous solution first reddens litmus paper, and then deprives it of its colour, except a slight greenish shade. It is inflammable, and burns with a shining smoky flame, Its boiling point is + 85° (*Cent.*), when it evaporates entirely without leaving any residue. He finds it to be a hydracid with a ternary base; the radical he has named *spiroil,* and the essential oil *hydrospiroilic* acid. Spiroil has the peculiarity of forming yellow compounds with oxygen, and with the metals, alkalies, and earths. Dr. Löwig mentions, that, in the decomposition of some of the compounds, the odour of roses is very perceptible*; thus affording an additional proof, if such were needed, of the affinity of the plant to the Rose tribe (*Rosaceæ*).

Medicinal Properties and Uses.—The root of Meadow-Sweet has been much praised for its efficacy in various kinds of fever and alvine fluxes. By Simon Pauli and others, a decoction of the root in wine has been strongly recommended. We might infer from its sensible properties that it has some claim to the character of a tonic and astringent, and in diarrhœa, dysentery, hæmorrhages, hæmorrhoids, &c., it might be useful when astringents are admissible. The herbaceous part of the plant has similar properties, but in a slighter degree. The flowers are reckoned sudorific and antispasmodic, and a warm infusion has been given with success to provoke the appearance of receding or languishing eruptive diseases*. The distilled water is a good vehicle for other medicines, and the flowers themselves are useful to strew about the room where patients are lying with fever, &c.†

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* For the interesting details relative to the analysis of the essential oil we must refer to Taylor's Scientific Memoirs, Part I., August, 1836, which contains a Translation of Dr. Löwig's paper, extracted from J. C. Poggendorf's *Annalen der Physik und Chemie*, vol. v. p. 596. *Berlin.*

An infusion or decoction of half an ounce of the root, or of one ounce of the leaves to a pint of water, may be taken as an astringent in doses of a cupful, at suitable intervals. The infusion of the recent flowers may be used as ordinary beverage.

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* Hall. Hist. Stirp. Helv. n. 1135.—Rosenstein om Barnsjukd, p. 134. 217.

† "The leaues and floures farre excell all other strowing herbes, for to decke vp houses, to straw in chambers, halls, and banqueting houses in the summer-time; for the smell thereof makes the heart merrie, delighteth the senses: neither doth it cause headache or lothsomeness to meat, as some other sweet smelling herbes do."—*Gerard. Em.* 1043.

CXXVIII.

MELILOTUS OFFICINALIS.

Common Melilot.

Class XVII. Diadelphia.—*Order* III. Decandria.

Nat. Ord. Leguminosæ.

Gen. Char.—*Calyx* tubular, five-toothed. *Petals* distinct, deciduous. *Legume* one or few-seeded, indehiscent, longer than the calyx.—Flowers racemose. Leaves ternate.

Spec. Char.—Stem erect, branched. Leaflets obovate-oblong, remotely serrated. Petals nearly equal in length. Legume two-seeded, ovate, wrinkled.

SYNONYMES.

Latin	Melilotus officinarum. *Bauh. Pin.* 331. Melilotus germaniæ. *Ger. Em.* 1205. *Lob. obs.* 501. Melilotus vulgaris. *Raii Syn.* 331. *Park. Theatr.* 719. *Trag.* 591. Trifolium Melilotus officinalis, *a.* *Lin. Sp. Pl.* 1078. *Eng. Fl.* iii. 297. *Eng. Bot.* t. 1340. Melilotus officinalis. *Willd. enum.* 790. *Dec. Prod.* ii. p. 187.
French	Melilot.
Italian	Meliloto.
Spanish	Meliloto.
Portuguese.	Meliloto.
German	Honigklee; Steinklee; Melilotenklee.
Dutch	Melote; Mallote; Welriekende Klaveren.
Danish	Amur; Meloten.
Swedish . . .	Amur; Melotengres.
Polish	Komonica Swoyska.
Russ.	Burkan.
Hungarian.	Sarkerep.

Description.—The root is annual or biennial, slender, elongated, slightly branched, and fibrous. The stem is erect, firm, branched, with wide-spreading branches, glabrous, somewhat angular, and two or three feet in height. The leaves are alternate, petiolate, composed of three obovate-oblong, obtuse, remotely serrated leaflets, with two small setaceous stipulæ at the base. The flowers are small, yellow, seldom white, pendent on their peduncle, and grouped in a lax, simple, elongated, unilateral, axillary raceme. The calyx is tubular, with five unequal teeth. The corolla is three times as long as the calyx; the standard or vexillum obovate, roundish, streaked with brown; the two wings, or alæ, are the length of the keel; the carina or keel is convex at the back, with a linear claw. The stamens are ten, nine united and one distinct, inclosed in the keel; anthers roundish. The germen is linear-ovate, compressed, with a filiform style and a simple stigma. The legume or pod is pendulous, obovate, acute, wrinkled, at length blackish, and rather gibbous, two-seeded (sometimes one-seeded); the seeds unequally cordate. Plate 32, fig. 2, (*a*) entire flower, magnified; (*b*) calyx, stamens, and pistil; (*c*) detached petals of the corolla; (*d*) pistil.

Common Melilot is a native of Europe, and is frequent in Britain, in thickets and hedges, and by way-sides. It flowers in June and July.

The generic name is derived from μελι, *honey*, λοτος, *lotus;* as the plant resembles the lotus, and is much frequented by bees. This species does not appear to be the μελιλωτος of Dioscorides, or the *Meliloton* of Pliny. It is called provincially Melilot-Trefoil, Kings-Clover, and Harts-Clover.

Qualities and general Uses.—The foliage of this plant is relished by most animals, and is peculiarly agreeable to horses; hence it has been called by some Italian writers *Trifolium cavallinum.* It has been recommended for cultivation in this country, and appears to deserve experiment. The Gruyere cheese of Switzerland owes its flavour to the flowers and seeds of Melilot, which are bruised and mixed with the curd before it is pressed. In Moldavia, the dried plant is put among furs, &c., to defend them from insects, whence it is called there *Mottenkraut*[*]. The distilled water is used by perfumers.

The recent plant has a sweet faint odour, and an herbaceous, bitterish, disagreeable taste; when dried it has a more fragrant smell, resembling that of sweet Vernal-Grass (*Anthoxanthum Odoratum*), or Woodruff (*Asperula odorata*). It yields its odorous principle to water, either by simple infusion or distillation; and though the distilled water is not very odorous, it has been observed that it increases the perfume of other aromatics. The aqueous infusion has also the leguminous bitterish taste of the plant itself, and is of a straw colour, which is slightly reddened by turnsol, and becomes of a greenish-brown by the addition of sulphate of iron. We have no accurate analysis of its constituent principles.

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[*] Beckmann's Bibl. vol. xiii. p. 592.

Medicinal Properties and Uses.—Emollient, diuretic, anodyne, and carminative properties have been attributed to this plant, and it has been commended in dysentery, colic, obstructions of urine, fluor albus, inflammations of the uterus, peritoneum, and abdominal viscera, and other widely differing affections, but without any just claim to regard, and its internal use has accordingly fallen into desuetude. Indeed, Haller * attributes an acrid property to the seeds from observing that a decoction combined with linseed, and exhibited in a case of angina, caused irritation instead of acting as a demulcent. Externally, in fomentations and cataplasms, it has been more rationally prescribed, as an application to inflammatory tumours and swellings, pleuritic and gouty pains, &c.; and as a lavement in colic. A plaster of Melilot has from the time of Galen and Mesue, enjoyed much reputation for discussing tumours, &c. Several of the continental pharmacopœias still retain a discutient plaster composed of Melilot, resin, wax, and olive oil. The powder of the dried plant is also added to plaster of cantharides, to modify its effects †.

The infusion may be made with an ounce of the plant to a pint and a half of water. For fomentations it may be combined with chamomile flowers and mallow, and for cataplasms with the bulbs of white lily, linseed, or fenugreek seeds. Geoffroy ‡ recommends an infusion of the flowers, to which is added a few drops of camphorated spirit, as a collyrium for weak or inflamed eyes.

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* Hist. Stirp. Helv. n. 362.

† Murray, Apparatus Med. tom. ii. p. 477.

‡ Mat. Med. tom. iii. p. 836.

CXXIX.

MERCURIALIS PERENNIS.

Perennial or Dog's Mercury.

Class XXII. Diœcia.—*Order* VII. Enneandria.

Nat. Ord. Euphorbiaceæ.

Gen. Char. Male Flowers:—*Perianth* single, tripartite. *Stamens* nine to twelve. *Anthers* globose, two-lobed. Female Flowers:—*Perianth* single, tripartite. *Styles* two. *Capsule* two-celled; cells one-seeded.

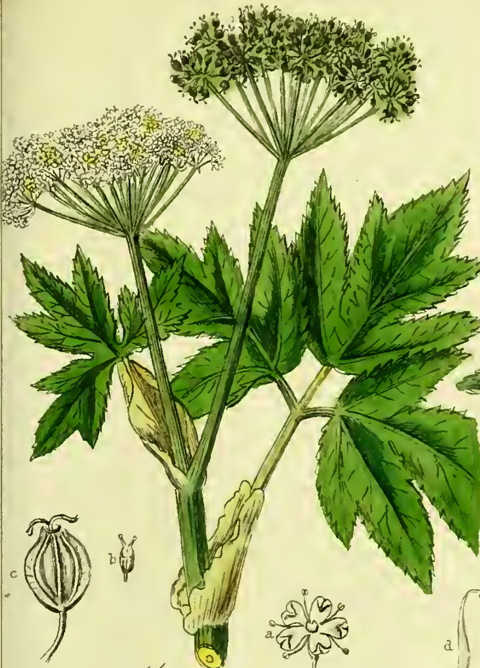
Spec. Char. Stem perfectly simple. Leaves rough. Root creeping, perennial.

SYNONYMES.

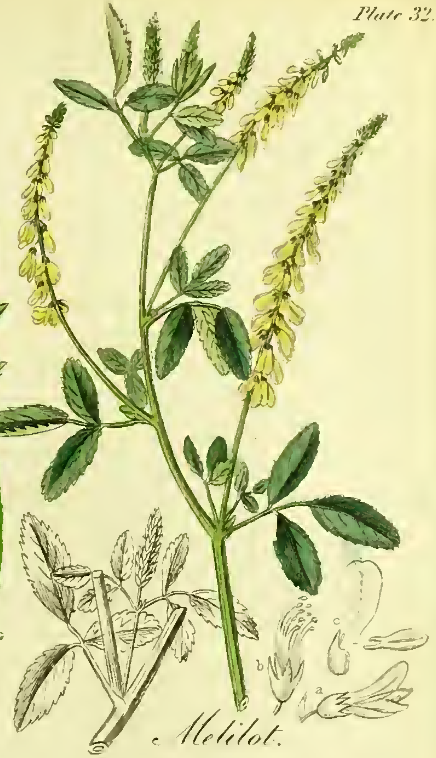
Latin	Cynocrambe. *Ger. Em.* 333. *Fuchs.* 435. *Lob. Obs.* 132. Cynocrambe vulgaris. *Park. Theatr.* 296. Mercurialis perennis, Cynocrambe dicta. *Raii Syn.* 138. Mercurialis perennis. *Lin. Sp. Pl.* 1465. *Eng. Fl.* iv. p. 248. *Eng. Bot.* t. 1872.
French	Mercuriale des bois; Mercuriale des montagnes.
Italian	Mercorella montana.
Spanish	Mercurial; Mercurial perruna; Ortiga muerta.
German	Wilde Bingelkraut; Bestandige Bingelkraut.
Dutch	Bilsenkruid.
Danish	Vild Bingelurt.
Swedish	Bingeloert.
Russ.	Proleska.

Description.—The root is perennial, creeping, much branched, whitish, and very fibrous. The stem is erect, subcylindrical, brittle, quite simple, and generally naked below, very leafy above, thickened at the joints, slightly winged, and rises about a foot in height. The leaves stand in opposite pairs, on short petioles, with two small stipulæ at the base; they are ovate, acute, serrated, from two to three inches in length, rough and of a deep green colour. The male flowers are produced in slender, erect, lax spikes, from the axils of the upper leaves;

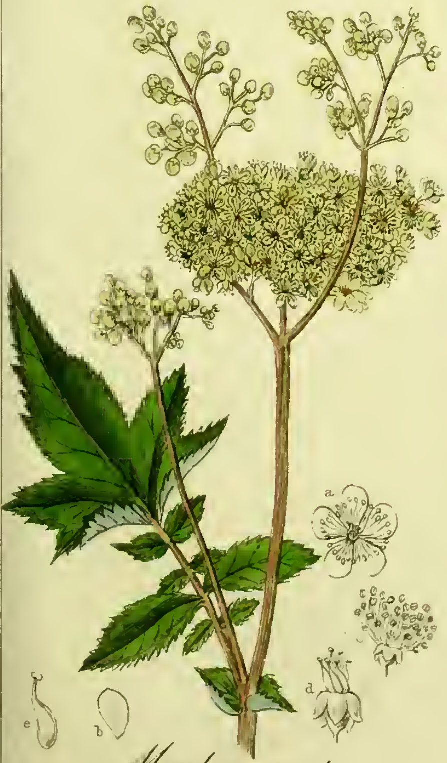
Plate 32.



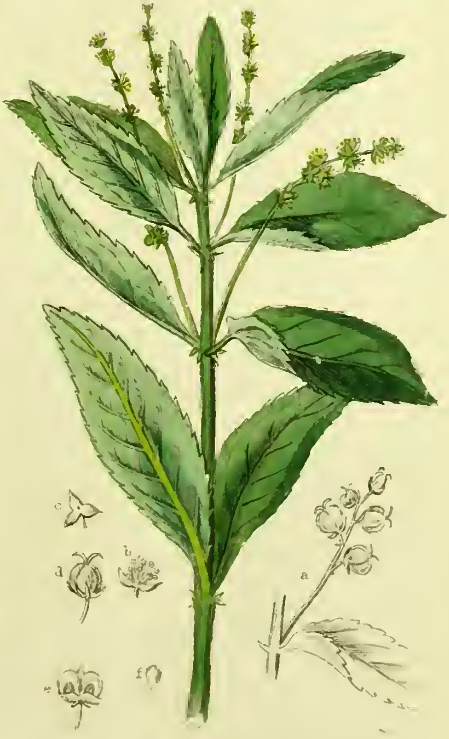
Masterwort.



Melilot.



Meadow-sweet.



Mercury.

the perianth is single, and divided into three deep, ovate, concave, spreading, yellowish-green segments; the stamens vary from nine to twelve, with capillary filaments, and globose two-lobed anthers. The female flowers are disposed in short axillary spikes, nearly twin; the perianth resembles that of the sterile plants; the germen is superior, roundish, compressed, bristly, with a furrow on each side, supporting two tapering, reflexed styles, slightly serrated on their inner side, with acute stigmas. (Two or three subulate bodies are sometimes found at the base of the germen, which are supposed to be sterile or abortive stamens.) The fruit is a two-lobed, two-celled, globose, scabrous capsule; each cell containing a single globose seed, of a brownish purple colour. Plate 32, fig. 4, (*a*) spike of female flowers; (*b*) entire barren flower; (*c*) perianth; (*d*) pistil; (*e*) section of the capsule to show the seeds; (*f*) seed.

This plant is common in woods and shady places, on banks, and by walls and hedges. The male and female plants are generally found in separate patches, so that it would appear to increase chiefly by the root. It flowers in April and May.

The name is derived from that of the god *Mercury*, who is said to have discovered the virtues, whatever they may be, of this genus. Bohmer supposes that the name is a corruption of *Muliercuralis*, as being useful to women, but the Greeks called it ερμου ποα, *Mercury's grass.*

The other indigenous species of Mercury is the *Mercurialis annua*, characterized by its annual fibrous root, smooth leaves, and stem with opposite branches. It flowers in August, and grows in waste places near towns and villages; but is much less common than the species here figured. It is a mucilaginous plant, and was formerly much employed in medicine, chiefly in clysters and emollient fomentations; when boiled it has been eaten as greens, and if taken in considerable quantities it proves cathartic.

Qualities and Uses.—The dried plant turns of a blue or blackish green, and by infusion in water the colour is completely extracted; it is destructible, however, by acids and alkalies. According to Bechstein, the root affords both a blue and crimson colour, useful in dyeing and painting. It has been remarked that this colouring matter indicates its affinity to the *Croton tinctorium*, or Turnsol, and indeed to many other plants of the order Euphorbiaceæ. The foliage is eaten by sheep and goats, but refused by horses and cows.

Poisonous Properties.—Some writers have asserted that Dog's Mercury, when boiled, has been eaten as greens, but if the subjoined account be correct, such a meal could not be taken with impunity. Sir Hans Sloane relates that a man, his wife, and three children, who mistook this plant for common English Mercury, (*Chenopodium Bonus Henricus*,) experienced its deleterious effects. The woman first boiled and then fried it with bacon, for her own and family's supper. After they had been in bed about two hours, the children were seized with sickness and vomiting, which was followed by drowsiness. The man did not wake until three hours after his usual time, and during the whole of the day while at his work he experienced a burning heat in his face, which he endeavoured to mitigate by means of water. The woman awoke some time after her husband, and on getting up was attacked with sickness, which continued at intervals for two or three days. One of the children slept from the Thursday night on which the poison was swallowed, till Monday evening following, and then after a few convulsive starts expired; endeavours had been previously used to awaken her, but in vain. The other two children slept for about twenty-four hours, and awoke with vomiting and purging, which probably saved their lives *.

It would hence appear that this plant is a powerful narcotico-acrid poison, and if the preceding account be correct, the symptoms produced by it are analogous to the action of Tobacco, Fox-glove, &c., while it bears a considerable resemblance to opium in its soporific effects.

Treatment.—The remedies to be employed in cases of poisoning by this plant are the same as those already directed under the articles Colchicum, Fox-glove, Fool's-Parsley, and Hemlock.

Medicinal Properties and Uses.—Perennial Mercury has not hitherto been used medicinally; but when we look at the number of virulent plants subdued to the service of the healing art, we would not despair of some benefit being eventually derived even from this unpromising species. The only instance that we can find of its popular employment is, that in the isle of Skye an infusion of it is used to produce salivation. We have introduced it on account of its poisonous properties.

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* Abridged from the account in the third edition of Ray's Synopsis.—See also Philosophical Transactions, No. 203, for September 1693.

CXXX.

DAPHNE MEZEREUM.

Common Mezereon.

Class VIII. Octandria.—*Order* I. Monogynia.

Nat. Ord. Thymelœæ.

Gen. Char. *Perianth* single, inferior, quadrifid, resembling a *corolla*. *Berry* one-seeded.

Spec. Char. Flowers subternate, lateral, sessile, appearing before the lanceolate, deciduous leaves.

SYNONYMES.

Greek	θυμελεια. *Dioscorides.*
Latin.	Laureola folio deciduo, flore purpureo. *Bauh. Pin.* 462. Chamelæa germanica, sive Mezereon. *Ger. Em.* 1402. *Raii Hist.* 1587. *Park. Theatr.* 202. Daphnoides sive Laureola. *Fuchs.* 226. c. 83. Daphne Mezereum. *Lin. Sp. Pl.* 509. *Eng. Fl.* ii. p. 228. *Eng. Bot.* t. 1381. Thymelæa Mezereum. *Gærtn. Fr.* i. 188.
French	Mezereon; Bois gentil; Laureolle femelle; Malherbe; Garou.
Italian	Mezereo; Laureola femina; Camelea; Biondella.
Spanish	Laureola hembra; Torbisco; Mecereon.
Portuguese.	Mezereao; Loireola femea.
German	Kellerhals; Seidelbast; Bergpfeffer.
Dutch	Peperboompje.
Danish	Kielderhels; Tisbast; Kinsbast.
Swedish . . .	Kœllerhals.
Polish	Wylcze lyka.

Description.—Mezereon is a bushy shrub, from four to six feet in height, with a strong branched root, beset with numerous fibres, and covered with a smooth olive coloured bark. The branches proceed from near the base of the stem; they are alternate, erect, pliant, covered with a smooth brownish, ash-coloured bark. The leaves, which appear subsequently to the flowers, are alternate, terminal, sessile, tapering, lanceolate, glabrous, entire, deciduous, and about two inches in length. The flowers are sessile, lateral, and disposed in clusters about three together, on the upper part of the branches, with smooth, ovate, membranous, deciduous bracteæ at the base. The perianth is single, inferior, resembling a corolla, of a light rose-colour, seldom white, consisting of a cylindrical tube covered with whitish appressed hairs, and a four-parted limb, separable into two distinct laminæ, the outer coloured, the inner herbaceous; segments ovate, acute, papillose. The stamens are eight in number, in two rows, inserted into the tube, the four upper opposite the segments of the perianth, the four lower alternate with them; filaments very short; anthers oblong, yellow, opening longitudinally. The germen is small, elliptical, globose, containing a solitary pendulous ovule; style very short, supporting a thin, disciform, downy stigma. The fruit is a globose berry, or rather drupe, of a bright scarlet colour, containing in the midst of pulp a single seed, or nut, which is globose, pointed, and covered with a whitish tunic. Plate 33, fig. 3, (*a*) entire flower; (*b*) perianth opened to shew the stamens and pistil; (*c*) pistil, natural size; (*d*) the same, magnified; (*e*) section of the same to shew the ovule; (*f*) section of the drupe; (*g*) nut.

Mezereon is a native of mountains and woods in many parts of Europe, as far north as Lapland, and is found in several English counties, apparently wild. Miller, who first speaks of it as an indigenous plant, discovered it near Andover, in Hampshire. It has since been found at Laxfield, in Suffolk; in the beech-woods of Buckinghamshire; near Appleton, Berks; also, in Oxfordshire, Worcestershire, and Staffordshire. The flowers appear in March, and in mild seasons about the end of February, prior to the leaves, which are not fully expanded till May.

The generic name has been given in allusion to the nymph *Daphne*, who was fabled to have been changed into a laurel; some of the plants of this genus having the habit of laurels. The specific name is probably of eastern origin, as according to Richardson, the Persians call this plant *Mâdzaryoûn*.

The Mezereon is an old inhabitant of the shrubbery, and is much esteemed for the precocity, beauty, and fragrance of its flowers, and the brilliancy of its fruit. It thrives well in loamy soil, and will grow under the shade and drip of other trees.

Qualities and general Uses.—A fine yellow dye may be procured from the branches of this plant. The bark, especially that of the root, may be made into a kind of greyish paper, also into thread and cordage. Some other species of Daphne may be used for similar purposes, and in Jamaica a plant is found called the Lace-Bark Tree, (*Lagetta lintearia,*) the inner bark of which consists of several layers, and may be extended so as to form ruffles, or may be pulled out into a silky web, three or four feet wide, and of considerable length. From the ripe fruit of Mezereon a fine red-lake colour may be prepared for painters. Pallas * states that the Russian women use these berries to rub their cheeks with, thereby producing an inflammatory redness which they consider beautiful, and Falks † observed the same practice among the Tartar women.

Every part of the plant is powerfully acrid and caustic. The flowers have a very sweet fragrance, resembling that of almond blossoms and violets; two or three of them chewed have merely an herbaceous flavour at first, but in a short time, the tip of the tongue is affected with an acrid burning taste, combined with a degree of numbness like that produced by Aconite; this sensation soon extends to the throat and fauces, and continues for several hours, although not a particle of the substance be swallowed. The nut of the drupe, commonly called the berry, has still more energetic qualities; likewise the bark, which is the part used in medicine ‡. The inner bark, when applied to the skin, produces inflammation, vesication, and a copious discharge of serum. It retains its acrimony when dried, and yields its virtues both to water and vinegar. "By digesting the bark in alcohol, then evaporating the liquid to separate the resin, diluting the residual fluid with water, filtering, and adding acetate of lead, Vauquelin obtained a copious yellow precipitate, which, when freed from the lead by means of sulphuretted hydrogen, he found to be a vegetable principle, *sui generis*, and he has given it the name of *Daphnin*."* It has been observed that the nut of the drupe contains an oily principle, which is exceedingly caustic.

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* Reisen. vol. i. p. 226.

† Topogr. Keuntniss des Russ. Reichs. vol. ii. p. 169.

‡ The bark is dug up for use in autumn, after the leaves have fallen. When dried it has a wrinkled epidermis, and the inner bark has a white cottony appearance.

Poisonous Properties.—The berries of this plant are a mortal poison to animals in general. Linnæus † compares them to nux vomica; he asserts that six of them will kill a wolf; and that he once saw a girl die of excessive vomiting and hæmoptysis, in consequence of taking twelve of them to check an ague. Vicat ‡ relates the case of a man who took a decoction of the wood for dropsy, and was attacked with profuse diarrhœa and obstinate vomiting, which latter recurred occasionally for six weeks, although measures were employed to arrest it. M. Blatin § also mentions an instance in which violent pain in the stomach and intestines were accompanied with a burning sensation of the skin, restlessness, loss of appetite, intense fever, and irregular action of the tendons. These symptoms were relieved by copious draughts of a sweetened decoction of marsh-mallow. Orfila's || experiments have been confined to the *Daphne Gnidium* or *Garou* of the French.

The berries are reputed to constitute the favourite food of various birds, especially of some species of Finch. This may be accounted for on the supposition that they eat only the pulpy part of the fruit, which is destitute of acridity ¶ and apparently innocuous.

For the treatment to be adopted in cases of poisoning, consult the preceding articles, Arum, Bryony, and Crowfoot. Draughts of warm milk and small doses of camphor have been recommended.

Medicinal Properties and Uses.—Drs. Munro and Russel were the first to introduce the Mezereon-bark into practice, as a stimulant diaphoretic, useful in venereal nodes from thickening of the periosteum. Cullen states that he had known it successful in obstinate syphilitic ulcers which had resisted mercury; while Home and other eminent men likewise speak

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* Thomson's Dispensatory, 1836, p. 328.

† Flora Suecica, p. 128. The same distinguished author, in his Flora Lapponica, says, "I have seen the peasantry in Scania give one of the berries to their companions by way of joke; after it has been a time ingested, it produces a burning heat in the throat, which the sufferer endeavours to extinguish by copious draughts of ale, but this is like pouring oil upon the fire; hence they call the plant Sorby-peppar, and Kœllerhals, *i. e. cellar-opener*.

‡ Histoire des Plantes Vénén. de la Suisse, p. 140.

§ In Roque's Phytographie Medicale.

|| Toxicol. Gen. vol. i. p. 703.

¶ Lewis Mat. Med. p. 560.

highly of its effects in scirrhous tumours, chronic rheumatism, and severe affections of the skin. Later practitioners have not been so fortunate in their experience of its anti-syphilitic powers, and Mr. Pearson observes, that it is an uncertain remedy; from its acrimony, producing heat and other disagreeable sensations in the fauces, and on many occasions disordering the primæ viæ. Nevertheless the decoction has proved beneficial in the treatment of chronic rheumatism, scrofulous swellings, lepra, and some other cutaneous affections.

The employment of the bark externally is more frequent. On the continent it is employed as an *exutory*, or substitute for blisters, to produce and keep up a serous discharge in chronic local affections*. For this purpose a piece of the bark about an inch square is soaked in water or vinegar, and then with an ivy or plantain leaf bound over it applied to the skin. This requires to be renewed night and morning, at first, and subsequently once in twenty-four hours, to keep up the discharge; thus serving for what is called a perpetual blister. As a topic it is also applied to the head, to relieve deafness, head-ache, tooth-ache, and some affections of the eyes, chronic ophthalmia, for instance; and has been recommended in coxalgia, chronic rheumatism, and various skin diseases. Linnæus states that the Swedes apply the bark to parts bitten by venomous reptiles and rabid animals; in such cases, however, it is not a proper substitute for the actual cautery. According to Pallas, the Russians employ it to allay the pain of carious teeth; when used for this purpose, care should be taken not to swallow the saliva, on account of its acrimony.

Dr. Withering tried it successfully in a case of difficulty of swallowing occasioned by paralysis. He directed the patient to chew a thin slice of the root as often as she could bear it, and in about a month she recovered the power of swallowing, although the case was of three years' standing †. The berries of Mezereon, formerly called *cocci gnidii*, are too virulent to be used medicinally, at least in their natural state. Pallas [*] however, informs us, that the peasants of Siberia swallow a number of them as a common purgative; Villars [†] observed the same in Dauphiny, and he adds, mothers do not hesitate to give them to their children in convulsive cough, in order to produce vomiting. Whatever may be the effects of such a dose on the obtuse sensibilities of these hardy mountaineers, there could be no surer poison to the natives of this country. An ointment made of the berries is also employed in the north of Europe, against foul ulcers, chancres, and cancer.

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* The bark of the Spurge-Flax, (*Daphne Gnidium*,) called by the French *Garou*, is more generally employed. "This has been known from time immemorial by the peasantry of Aunis, a western province of France, under the name of *ear-wood*; they introduce it into the ears of children, to produce a serous discharge, which they regard as a preservative against the ill effects of dentition, and other infantile diseases."—*Flore Medicale*, tom. iv. p. 29.

† "For this purpose it should be sliced longitudinally, as the acrimony

The dose of the bark is from two to ten grains, but it is seldom given in substance.

The decoction is prepared thus:—

DECOCTION OF MEZEREON [‡].

Take of Bark of Mezereon root	two drachms;
Liquorice root, bruised	half an ounce;
Water	three pounds.

Boil with a gentle fire down to two pounds, and strain.

The dose is from four to six ounces, three or four times a day.

The London College orders a compound decoction of Sarsaparilla, in imitation of the celebrated *Lisbon diet drink*, containing the Mezereon bark as the primary ingredient, but in too small a proportion. Van Mons [§] directs a compound decoction of Mezereon, containing Mezereon bark, twigs of Bitter-sweet, and Burdock root, sweetened with Liquorice root; and we conceive that such a combination may prove useful in some of the above-mentioned diseases.

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resides in the bark only, the woody fibre being nearly inert."—*Dr. Thomson.*

[*] Reisen. *l. c.*

[†] Plantes de Dauphine, vol. i. *pref.*

[‡] Decoctum Daphnes Mezerei.—*Pharm. Ed. et Dubl.*

[§] Pharmacopée usuelle, &c.—*Louvain,* 1821.

CXXXI.

POLYGALA VULGARIS.

Common Milkwort.

Class XVII. Diadelphia.—*Order* II. Octandria.

Nat. Ord. Polygaleæ.

Gen. Char. *Calyx* of five sepals, two of them wing-shaped and coloured. *Petals* combined by their claws with the filaments, the lower one keeled. *Capsule* compressed. *Seed* pubescent, with a caruncle at the hilum.

Spec. Char. Leaves linear-lanceolate. Stems ascending. Flowers in a terminal raceme. Bracteæ three to each pedicel. Wings of the calyx ovate, about as long as the corolla.

SYNONYMES.

Latin	Polygala purpurea. *Ger. Em.* 564. Polygala minor. *Park. Theatr.* 1332. Polygala. *Raii Syn.* 287. Polygala vulgaris. *Bauh. Pin.* 215. *Lin. Sp. Pl.* 986. *Eng. Fl.* iii. 259. *Eng. Bot.* t. 76.
French	Polygala; Polygala commun; Laitier.
Italian	Poligala.
Spanish . . .	Poligala; Lechera.
Portuguese.	Poligala; Leitera.
German. . .	Kreuzblume; Milchblume.
Dutch.	Kruisbloem.
Danish	Kaarsblomster.
Swedish. . .	Jungfru mariœlin.
Polish. . . .	Wyczka konicza.
Russ.	Iztod.
Japanese . .	Fima fagi.

Description.—The root is perennial, somewhat ligneous, branched, creeping, fibrous. The stems are ascending, sometimes procumbent, simple, cylindrical, and from four to eight inches in length. The leaves are glabrous, scattered, sessile, linear-lanceolate, sub-acute, very entire; the lowermost shorter and broader than the rest. The flowers are produced in a terminal raceme; they are usually blue, sometimes purple, rose-coloured, or white, with three deciduous bracteæ at the base of each pedicel. The calyx consists of five sepals, three of them smaller, of which two are connected, and the two inner petaloid, coloured, large, ovate-elliptical, marked with green lines, persistent, ultimately yellowish green, and serving as a defence to the fruit. The corolla is composed of three petals, united by their claws with the filaments, the lower one or keel bifid, beautifully crested. The stamens are diadelphous, the filaments connate below into a tube, then separating into two bundles, each with four anthers, which are innate, one-celled, and open by a pore at the summit[*]. The germen is free, two-celled, with a simple incurved style, and a two-lobed stigma. The fruit is a compressed, cordate, drooping capsule, slightly emarginate at the top, two-celled, two-valved, enveloped by the persistent calycine wings. Seed solitary, pendulous in each cell. Plate 33, fig. 1, (*a*) entire flower; (*b*) corolla; (*c*) lower petal or keel united with the filaments and terminated by a crest; (*d*) capsule; (*e*) the same opened to show the seeds.

This elegant species of Milkwort grows on the borders of woods, and on dry hilly pastures, especially in a chalky or gravelly soil. It flowers in June and July.

The generic name is derived from πολυ, *much*, and γαλα, *milk*, in allusion to the property assigned to the plant of increasing the milk of animals. The πολυγαλον of Dioscorides is supposed to refer to this plant. Dodonæus calls it *flos ambarvalis*, "because," says Gerard, "it doth especially floure in the Crosse or Gang weeke, or Rogation weeke; of which floures the maidens which vse in the countries to walke the Procession, do make themselves garlands and nosegaies: in English wee may call it Crosse-floure, or Procession-floure, Gang-floure, Rogation-floure, and Milkwort."

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[*] The stamens are sometimes ten.

There are numerous species of Polygala, most of them natives of warm climates. The species above described is the only indigenous Milkwort, if we except the *Polygala amara*, which is scarcely specifically distinct, merely differing in its obovate, obtuse, radical leaves, more erect stem, and longer calycine wings: it is also smaller in all its parts, and more bitter to the taste. The Rattlesnake root (*P. Senega*), a native of North America, is a powerful expectorant, and a stimulating tonic. Several other species are endowed with similar properties, and *P. glandulosa*, the *Yan-foo* of the Chinese, is reputed to be emetic.

Qualities and general Uses.—This plant has been recommended for cultivation as affording a useful food for cattle. According to the Swedish experiments, it is eaten by cows, sheep, and goats, but is refused by swine. The dried herb is said to afford a pleasant flavour when infused in the manner of tea.

Milkwort is destitute of odour; but its taste is bitter, remaining a long time in the mouth. These properties appear most developed in the bark of the root, which is of a yellowish ash colour externally, and white within; and its bitterness is accompanied with somewhat of an acrid and aromatic flavour. Water and alcohol equally extract its virtues. Peschier has detected in the root of *P. Senega*, a new alkaline principle, which he has named *Polygalina*, united with a new acid which he calls the *Polygalinic;* and this salt he supposes is the active principle. It is probable that this species contains the same principle in an inferior degree, but we have no analysis.

Medicinal Properties and Uses.—The properties of this plant are stated to be expectorant and tonic, and at the same time purgative[*]. Gesner[†] affirms that an infusion of the herb in wine for twenty-four hours, is a safe and effectual purgative, as he himself experienced. Van Swieten and Collin[‡] attributed to it great efficacy in various inflammatory diseases of the chest, particularly in hœmoptysis and pulmonary phthisis, and it is recommended in pleurisy by Hulme*. It must not be forgotten, however, that the root of Triticum repens and Liquorice, the flowers of Coltsfoot, and milk, were sometimes associated with it, and to these in some measure the success is to be attributed. Sir J. E. Smith† says, "an infusion of the herb taken in a morning fasting, promotes expectoration, and is good for a catarrhous cough. I tried it at Montpellier, by the advice of Professor Gouan, with success, and have since known it useful." Some authors have recommended its employment in dropsy and leucophlegmasia.

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[*] Proceeding upon the supposition that the *P. vulgaris* and *P. amara* are referrible to one species, whose properties are affected chiefly by soil and situation, we have here spoken of them indiscriminately. Duhamel asserts that the common Milkwort has no purgative quality.

[†] Epist. lib. iii. fol. 121.

[‡] Observ. circa morbos. P. ii. p. 203.

The dose of the dried root is from half a drachm to a drachm in powder. The infusion or decoction is made with an ounce of the herb to a pint of water, which may be sweetened with honey or sugar, and taken freely.

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* On puerperal fever.

† Eng. Bot. vol. i.

CXXXII.

MENTHA PIPERITA.

Pepper Mint.

Class XIV. Didynamia.—*Order* I. Gymnospermia.

Nat. Ord. Labiatæ.

Gen. Char. *Calyx* equal, five-toothed; orifice naked, seldom villous. *Corolla* nearly regular, quadrifid, its tube very short. *Stamens* distant, exserted or included. *Filaments* naked. *Anthers* with two parallel cells.

Spec. Char. Leaves ovate-lanceolate, strongly serrated, acute, slightly hairy, stalked. Spikes interrupted. Bracteæ lanceolate. Calyx glandular, glabrous at the base.

SYNONYMES.

Latin.	Mentha spicis brevioribus et habitioribus. *Raii Syn.* ed. ii. p. 124. Mentha piperis sapore. *Blackw.* t. 291. Mentha piperita. *Lin. Sp. Pl.* 305. *Eng. Bot.* t. 687. *Eng. Fl.* iii. p. 76. Mentha piperita officinalis. *Sole Menth. Br.* 15. t. 7.
French	Menthe poivre.
Italian	Menta piperita.
Spanish. ..	Pimienta piperita ; Menta pimentada.
Portuguese.	Hortelana pimentosa.
German. ..	Pfeffermünze.
Dutch.	Peperminte.
Danish	Pebermynte.
Swedish . ..	Peparmynta.
Polish.	Mienta pieprzna.

Description.—The root is perennial, long, creeping, and furnished with numerous small fibres. The stems are numerous, ascending, branched, quadrangular, channelled, purplish, sprinkled with recurved hairs, and about two feet in height. The leaves are opposite, petiolate, ovate-lanceolate, acute, rounded at the base, strongly serrated, smooth, and of a deep green colour above, slightly hairy, and marked with whitish or purplish veins beneath. The flowers are small, pedunculate, disposed in axillary clustered cymes, forming an interrupted, cylindrical, obtuse, terminal spike, with two small lanceolate, acuminate, ciliated bracteæ at the base of the cymes, and very small subulate ones at the base of the pedicels. The calyx is tubular, striated, glabrous at the base, with a five-toothed purplish, ciliated limb, studded with pellucid glandular dots. The corolla has a whitish tube, a little longer than the calyx, and a four-cleft purplish limb; the segments ovate, oblong, spreading, the uppermost broader, emarginate. The stamens are didynamous, concealed in the corolline tube, with short setaceous filaments, and ovate-cordate purplish anthers (often destitute of pollen). The germen is four-parted, seated on a fleshy disk, and supporting a filiform style, longer than the corolla, tipped with a bifid stigma. The fruit * consists of four small nuts, inclosed in the persistent calyx, and each containing a single erect seed. Plate 33, fig. 2, (*a*) entire flower, magnified; (*b*) corolla opened to show the stamens; (*c*) pistil.

England is generally acknowledged to be the native country of the Pepper Mint. It is found in moist and watery places, though by no means frequent, and is often cultivated in gardens. For medicinal purposes, more than one hundred acres of this plant are cultivated about Mitcham in Surrey. It flowers in August and September.

According to Ovid, the name Mentha, is derived from Minthes, the daughter of Cocytus, who was changed into a plant of this kind by Proserpina in a fit of jealousy †. The term μινθη frequently occurs in the writings of Hippocrates, and

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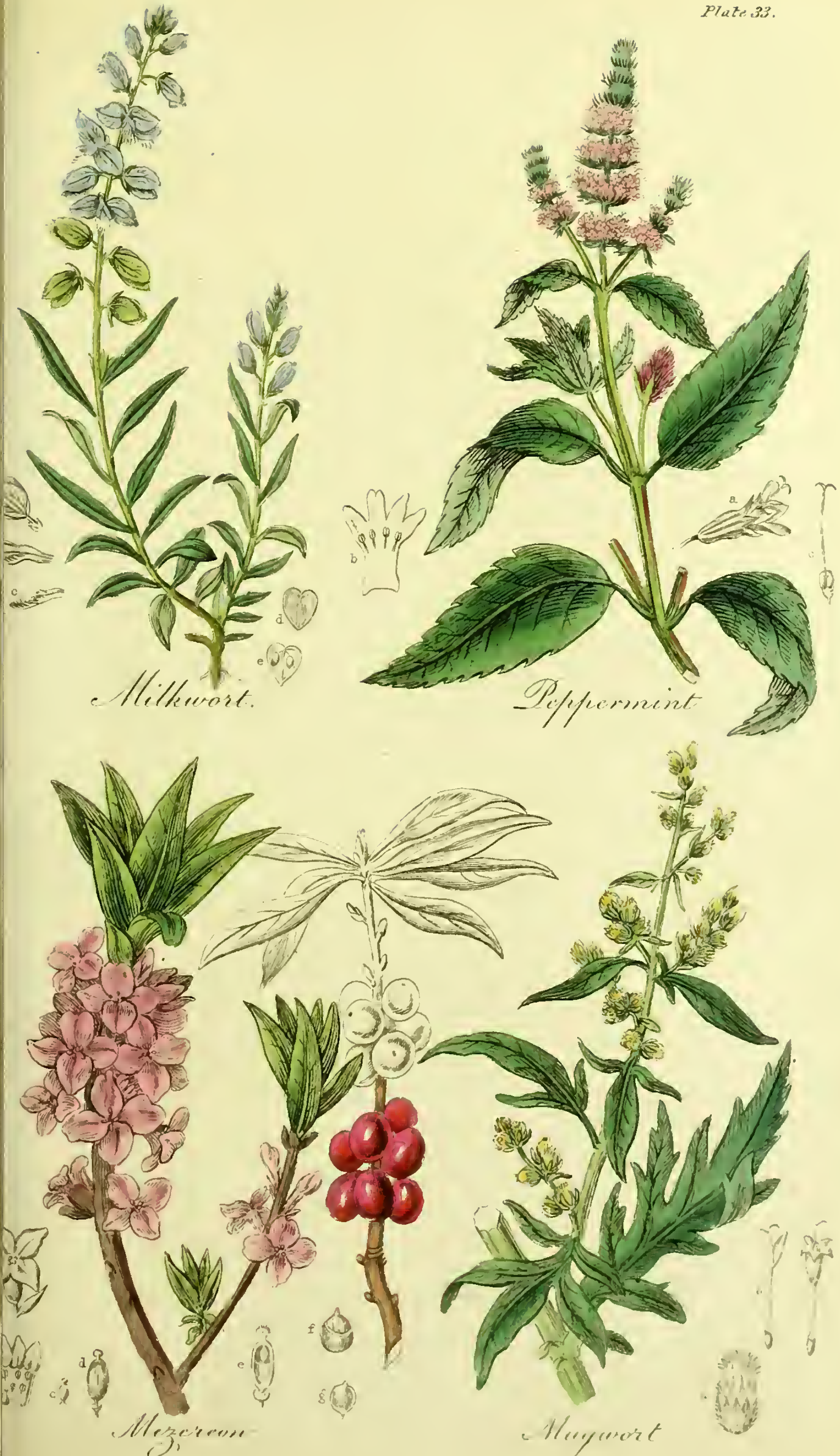
* The fruit is seldom perfected, as the plant increases chiefly by the root.

† ——"An tibi quondam
Fœmineos artus in olentes vertere menthas
Persephone licuit?" *Met.* l. x. v. 728.

Plate 33.


Milkwort.
c
d
e
Peppermint
a
b
c
Mezereon
c
d
e
f
g
Mugwort

ηδυοσμος, (from ηδυς, *sweet*, οσμος, *odour*,) in those of Dioscorides, but to what species they refer is uncertain. Pliny designates it *Menta.*

There are thirteen species of Mint indigenous to Britain *, several of which have analogous though inferior properties to the species here figured. Spear Mint (*M. viridis*) resembles the Pepper Mint in habit, but is specifically distinguished by its more slender sessile leaves, and longer spikes of uniform purple flowers. The hairy Mint, (*M. hirsuta,*) which grows on the banks of rivers, may also be confounded with it, especially as it is very variable in habit, and has much of the odour of Pepper Mint; it may be discriminated, however, by the hairs on the calyx, the pubescent leaves, the hirsute stem, and by the usually capitate flowers.

QUALITIES.—Dioscorides † relates that Mint (probably *Spear Mint* or *Mentha viridis*) hinders the coagulation of milk, and prevents its being made into cheese; more recent authorities have stated the same fact, and Linnæus ‡ mentions, that dairy-maids frequently complain that much less than the usual quantity of cheese is obtained from the milk of cows which, after harvest, are allowed to feed on the Corn Mint, (*M. arvensis,*) but they ascribe the effect to enchantment. Lewis observes, that milk in which the leaves of Mint are macerated, curdles much less quickly than pure milk.

The essential oil of this plant, for the sake of its aromatic fragrance, is used by perfumers, and is employed in various ways by confectioners, especially to form lozenges; the solution of it in alcohol or gin, forms the well known liqueur or dram called pepper-mint.

Pepper Mint has a strong, spirituous, camphor-like odour and a pungent, aromatic, bitterish taste, producing at first an impression of warmth in the mouth, which is immediately followed by a diffusive sensation of coldness. Its qualities are rather increased by drying. The aqueous infusion is of a reddish brown, and the spirituous of a greenish colour; both are imbued with the virtues of the plant. Either the fresh or dried plant distilled with water, affords a considerable portion of very odorous, pungent, essential oil, of a pale greenish yellow colour, becoming darker coloured, and often more fragrant, by age, and holding camphor in solution *. Gaubius discovered the presence of camphor in the shape of white flocculent shining filaments, which were thrown down from the distilled water of the dried herb, after being kept several months, and it has since been detected by Proust, and other chemists, in nearly all the *Labiatæ*.

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* See Hooker's British Flora.

† Mat. Med. lib. iii. c. 41.

‡ Amæn. Acad. (*Menthæ Usus.*)

MEDICINAL PROPERTIES AND USES.—Some very apocryphal qualities were attributed by the ancients to Mint. Observing that the plant hindered the coagulation of milk, by a false induction they concluded that it must necessarily attenuate the humours, and impart an undue fluidity to the blood; hence it was esteemed antiaphrodisiac †, capable of producing sterility, and efficacious in dissipating coagulated milk in the breasts of mothers. The properties attributed to Pepper-Mint, in modern times, are those of a tonic, stomachic, carminative, antispasmodic, and resolvent. In the former capacity it is useful in debility of the stomach and torpidity of the bowels; as a carminative ‡ and antispasmodic, it has been particularly recommended in syncope, paralysis, asthma, hysteria, nervous vomitings, flatulent colic, hypochondriasis, and other spasmodic affections. It has also enjoyed considerable reputation for restoring suppressed menstruation, dependent on inertia or defective action of the uterus; and it forms an empirical remedy against stone and gravel.

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* As with Lavender, &c., the essential oil resides in utricles or pores scattered over the leaves, but more especially the calyces. A much larger quantity of oil is obtained in a warm dry season, and the produce varies from a drachm and a half to three drachms, from two pounds of the recent plant. If the Pepper Mint is cut in wet weather, it turns black and is worthless. "The cultivators of the plant observe, that to keep up its quality the roots must be transplanted every three years, otherwise it degenerates into the flavour of Spear Mint."

† "Mentha (*μινθη*) calefacit et urinam ciet, vomitionemque sistit; ac si quis eam sæpe comedat, ejus genitale semen colliquefacit ut effluat, et arrigere prohibet, corpusque imbecillum reddat." *Hippocrates de victus ratione*, lib. ii. p. 359. ed. Foes. Aristotle also advises, "Mentham tempore belli nec serito nec edito."

‡ Martial (Epig. lib. x. 48.) calls it "*ructatrix Mentha.*"

Externally it may be employed dry in little bags, or in cataplasms or fomentations to chronic swellings, indolent tumours, and certain foul ulcers. The essential oil is added to gargles for indolent swellings of the gums, and to liniments to rub on parts affected with chronic rheumatism ; it is also applied to ease the pain of carious teeth.

The dried plant is given in powder in the dose of two drachms every two hours, but it is seldom employed in this way. One of the best preparations is the infusion in the form of tea, which may be made with two drachms of the dried plant to a half pint of hot water, to be taken at one dose. It may also be macerated in wine. The officinal preparations are a distilled water, essential oil, and spirit.

PEPPER-MINT WATER [*].

Take of Pepper-Mint dried	two pounds ;
Proof spirit	seven ounces ;
Water	two gallons.

Distil a gallon.

This is a useful carminative in spasmodic pains of the stomach, in the dose of one to three ounces, or a wine-glassful. "In the present day, however, it is principally employed as a vehicle to conceal the more nauseous drugs. This renders the medicine so extremely common, that its peculiar properties are generally overlooked, and little care is devoted to the right preparation of the article. In most shops, instead of the distilled water, they merely unite mechanically a quantity of the essential oil with common water, and a small quantity of sugar. Where this composition is substituted for the proper distilled water, a great degree of heat and restlessness, with an uneasy burning sensation at the stomach, is not unfrequently produced, which is immediately relieved by having recourse to the genuine distilled water."[†]

The essential oil is obtained from the distilled water in the usual manner. It is a favourite domestic remedy in flatulent pains and cramp of the stomach, faintness, nausea, &c., a drop or two being taken upon a lump of sugar [‡]. What is called essence of Pepper Mint is a combination of one part of the oil with about two parts of rectified spirit.

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[*] Aqua Menthæ Piperitæ.—*Pharm. L. E. D.*

[†] Waller, Brit. Dom. Herb. p. 239.

[‡] Pepper-Mint lozenges are a mixture of oil of Pepper-Mint with starch, sugar, and mucilage of tragacanth.

SPIRIT OF PEPPER-MINT [*].

Take of Oil of Pepper-Mint .... three drachms;
Proof spirit .... one gallon;
Water .... one pint.

Mix: then let a gallon distil over a slow fire. [A pound and a half of the dried herb may be substituted for the oil.]

A useful carminative in nausea and flatulence, and an adjunct to purgative medicines. Dose from half a drachm to a drachm.

Spear Mint (*Mentha viridis*) has very similar properties to the foregoing, but it is less pungent, and to some patients more grateful. It invigorates the stomach, relieves pain and colic arising from spasm, and allays sickness and vomiting proceeding from the same cause. Cullen [†] observes, that the infusion in warm water agrees better with the stomach than the distilled water, which is often somewhat empyreumatic. The officinal preparations are the same as those of Pepper Mint. A pleasant conserve may be made with the fresh leaves.

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[*] Spiritus Menthæ Piperitæ.—*Pharm. Lond. et Edin.*

[†] Mat. Med. vol. ii. p. 149.

CXXXIII.

VISCUM ALBUM.

Common Misseltoe.

Class XXII. DIŒCIA.—*Order* III. TETRANDRIA.

Nat. Ord. LORANTHEÆ.

GEN. CHAR. Male Flowers:—*Calyx* obsolete. *Petals* four, ovate, fleshy, united at the base, each bearing a single anther adnate with the upper surface. Female Flowers: — *Calyx* an obscure margin. *Petals* four, erect, ovate, minute, dilated at the base, deciduous. *Stigma* sessile. *Berry* inferior, one-seeded. *Embryo* sometimes double.

SPEC. CHAR. Leaves obvate-lanceolate, obtuse. Stem dichotomous. Heads of flowers axillary.

SYNONYMES.

Greek....	ιξος.
Latin...	Viscum baccis albis. *Bauh. Pin.* 423. Viscum. *Raii Syn.* 464. *Ger. Em.* 1350. *Dod. Pempt.* 814. Viscum polycoccon. *Cam. Epit.* 556. *Park. Theatr.* 1393. Viscum album. *Lin. Sp. Pl.* 1451. *Eng. Fl.* iv. p. 236. *Eng. Bot.* t. 1470.
French. ..	Gui; Gui blanc; Gui de chêne.
Italian....	Vischio.
Spanish ..	Muerdago; Liga.
Portuguese	Visco.
German ..	Mistel; Eichenmistel.
Dutch....	Marentakken.
Danish. ..	Fugleüm; Mestertjene.
Swedish ..	Mistel.
Polish ...	Jemiel; Jemiola.
Russ.	Omela.
Hungarian	Lep.

Description.—Misseltoe is a parasitical shrub, with a hard ligneous root, firmly attached to the wood of the tree on which it grows. The stem is firm, succulent, of a bright yellowish green colour, from one to two feet in height, divided into numerous dichotomous branches. The leaves are opposite, persistent, obovate-lanceolate, obtuse, coriaceous, thick, with parallel ribs, quite entire, of a light green colour. The flowers are diœcious, disposed in sessile axillary heads, of about five flowers: the male flowers have an obsolete calyx, a corolla of four ovate petals, united at the base, each bearing a single compressed sessile anther*; the female flowers, which are very small, are furnished with a calyx forming an obscure margin, a corolla of four ovate, equal, deciduous petals, which are united at the base, an inferior ovary crowned by the border of the calyx, and a sessile, obtuse stigma. The fruit is a smooth, whitish, succulent, globose berry, containing a solitary, cordate, compressed seed. The seed has sometimes two, occasionally three embryos. Plate 34, fig. 2, (*a*) head of male flowers; (*b*) head of female flowers; (*c*) female flower detached; (*d*) seed denuded of its integument.

Misseltoe is parasitic chiefly on apple-trees, hence it is most frequent in Herefordshire, Worcestershire, and the south of England. It is also found, though rarely, upon the oak, hawthorn, service, pear-tree, lime-tree, walnut, willow, &c. It flowers in May, and the berries ripen in October.

Viscum is derived from the Greek ἰξος, and that from the Celtic *gwid, the shrub*, par excellence, so called because of the superstitious veneration with which it was regarded by the ancients. Misseltoe or Mistletoe, in Saxon, signifies *bird-lime shrub*, and from its Latin name we have the term *viscous*.

The germination of Misseltoe is very different from that of most other plants. It is thus described by Duhamel:—"The seeds of Misseltoe may be made to germinate upon stones, pieces of dead wood, and even upon the ground; but they never take any increase, except upon trees. When the seed first begins to sprout, it generally projects two or three radicles terminated by a round body. The radicles gradually elongate, and as soon as they have pierced the bark, the round bodies open, and their aperture resembles in shape a little funnel, the interior of which is lined with a viscous grained substance. From the centre and edges of this orifice proceed small fibres, which insinuate themselves between the lamina of the bark, even to the wood, which, however, they do not penetrate." Dutrochet observes, that the radicle of the seed does not, as with other plants, tend towards the centre of the earth during its development, but towards the centre of the mass of matter—the trunk or branch of the tree to which it may be attached; so that if placed on one side, it grows horizontally or laterally, and if below it shoots directly upwards. Aristotle* and others of the ancients imagined that the seed would not grow unless it passed through the intestines of a bird. Bauhin, Scaliger, and some comparatively modern writers, rejecting this opinion as fabulous, have taken up a more erroneous hypothesis, viz. that the plant is not produced from seed, being a kind of excrescence on the tree to which it is attached†.

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* The anther is broken up into a number of hollow cavities containing pollen, and not regularly divided into lobes.

The Misseltoe was an object of the most superstitious regard among our Saxon ancestors. When growing on the oak it was considered the peculiar gift of the gods, and was gathered by the Druidical priest himself, clothed in a white robe, and armed with a golden sickle. This ceremony was performed annually, and was accompanied with the sacrifice of two white bulls and a repast under the oak; hymns were then sung in honour of the divinity, and prayers were offered for a blessing on their solemnities. At the commencement of the new year, the plant was distributed among the people as a sacred relic, and was deemed a panacea against every disease, and a remedy for poisons[*]. Some naturalists suppose that the *Loranthus Europæus*, which is very frequent in the south of Europe upon the oak, is the Misseltoe of the ancients, and that when every vestige of Druidism was swept away from Britain, the sacred plant shared in the common desolation; but "the very circumstance of a *search* being made for the Misseltoe of the oak, in an age when these islands were covered with forests of oak, is opposed to the idea of the *Loranthus* being the plant in question: had it then been indigenous here, the oak would have been its common if not exclusive habitat, and this confirms the belief that the *Viscum* was the branch which the Druids went with such solemnity to cull."[†]

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* De Gen. Animal, lib. i. c. 1.

† See Bauhin's Pinax, 493.—Scaliger, Exercit. 168.—Gerard, Em. 1350.—Colbatch (*Dissertation concerning Misseltoe*, p. 7.) gives a better account of it, in the following words:—"The Misseltoe thrush, during the winter, is nourished from the pulp of the berries, but the seeds are discharged with the excrement, undigested. Now the excrement, being of a slimy nature, sticks fast to the branches of the tree upon which it falls; and if there be any crack in the bark, there the seed lodges itself, and produces a plant the next year. It has been often propagated by cutting a slit into the bark of a tree, and sticking in a seed."—As the plant furnishes bird-lime, the thrush might thus be said to cause his own destruction: hence the proverb κιχλα χεζει αυτη κακὸν, (*turdus cacat in sui excidium,*) or, as the old doggrel expresses it—

"The thrush, when he pollutes the bough,
Sows for himself the seeds of woe."

Virgil adheres to the opinion already mentioned, of its not being reproduced by seed:—

> "Quale solet sylvis brumali frigore viscum
> Fronde virere novâ, quod non sua seminat arbos,
> Et croceo fœtu teretes circumdare truncos."
> *Æneid*, lib. vi. v. 205.

The berries were esteemed poisonous: Shakspeare probably alludes to this opinion when he calls it *baleful Misseltoe*:—

> "A barren and detested vale, you see it is;
> The trees, though summer, yet forlorn and lean,
> O'ercome with moss and baleful Misseltoe."

Yet the berries are greedily devoured in the winter months by thrushes, field-fares, wood-pigeons, and other birds. Sheep are fond of the foliage, and it is even said to preserve them from the rot. Moreover, Bock[‡] states that poor persons have, in times of scarcity, collected and dried the branches and leaves of Misseltoe, then pulverised and mixed them with rye-flour, and thus obtained a kind of bread which was by no means unwholesome.

Qualities.—The leaves and tops, when recently gathered, are nearly inodorous, with a sub-viscid, somewhat austere taste when masticated. "Extracts made from them by water are bitterish, roughish, and subsaline; the spirituous extracts, in quantity smaller than the aqueous, are in taste stronger, nauseous, bitterish, and sub-austere."[*] The berries afford a large quantity of glutinous, sweetish mucilage like caoutchouc, insoluble in water and alcohol. A similar mucilage resides in the bark[†], which appears also to contain an astringent principle, although infusions of it are scarcely affected by sulphate of iron.

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[*] Vide Plin. Hist. lib. xxiv. c. 4.

[†] Burnett's Outlines of Botany, p. 765.

[‡] Natural History of Prussia, vol. iii. p. 367.

Medicinal Properties and Uses.—Hippocrates, Dioscorides and Galen highly extol the virtues of Misseltoe, or at least the glue obtained from it, as an external remedy, but neither of them mentions its internal employment except Hippocrates[‡], who recommends it in diseases of the spleen. At the commencement of the 14th century[§] we find the Misseltoe of the oak spoken of in *Gordon's Lilium Medicinæ* as a remedy for epilepsy. Superior efficacy was for many ages attributed to it when obtained from the oak;—an opinion doubtless originating in the high value attached to it as a sacred plant in the days of Druidical superstition. Matthiolus and Paracelsus also laud its effects in epilepsy, and Kölderer, Cartheuser, Colbatch, Löseke, Van Swieten, &c., state that they found it beneficial not only in this redoubtable disease, but in other convulsive affections. Colbatch[||] affirms that a case of chorea yielded to its persevering employment, and that it is a specific in epilepsy; in which disease he gave it in the dose of a drachm in powder two or three times a-day, sometimes accompanied with an infusion of the plant. He adds that its anti-epileptic powers are greatly increased by the addition of assafœtida[¶]. He lays great stress upon the manner in which it is prepared, recommending it to be gathered in December, carefully dried, and then reduced to powder, which should be kept in well-stopped bottles in a dry place. Kölderer * asserts that he found the aqueous and vinous infusion efficacious in convulsive asthma and in hiccough. Bradley † extols its good effects in hysteria, paralysis, and other nervous affections; and it has not been without its advocates as a remedy in various fluxes, dysentery, &c., and even in vertigo and apoplexy. Externally it has been recommended by the earliest medical authorities as discutient and emollient. The glutinous matter obtained from it has been applied with reputed success to resolve tumours, &c., and to assuage the pain of gout.

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[*] Lewis Mat. Med. p. 575.

[†] Birdlime is obtained from the recent bark by bruising it thoroughly, and then forming it into small lumps which are repeatedly washed in pure water, and well squeezed between the fingers, that the filamentous part may be separated from the glue. It may also be procured in the same manner as from Holly (see vol. ii. p. 4).

[‡] Linden, ii. p. 238.

[§] At this period it was not only taken as a medicine, but hung round the neck as an amulet against poison, witchcraft, and possession of the devil.

[||] Dissertation concerning Misseltoe, 1 ed. 3. London, 1723, p. 22.

[†] Tissot and Hufeland combined it with valerian.

The preceding statements, it must be confessed, are far from conclusive, but though exaggerated they have not been proved to be so devoid of truth as to justify the assertion that the plant is inert. Indeed, fresh experiments should be made with the bark, which from its sensible properties appears to be most worthy of trial. It probably deserves to be considered as a slight tonic. The berries are reputed to act as a purgative and sometimes to produce hypercatharsis ‡, and other excitant effects.

The dose of the powder is from one to three drachms daily. Two ounces of it infused in a pint of wine, has been recommended in the dose of two or three ounces, three or four times a day.

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* Diss. Viscum planta parasit. p. 12.

† Mat. Med. p. 115.

‡ Galen Simpl. lib. vi.—Paulus Ægineta, lib. vii.—Nuc. Belg. p. 307.

CXXXIV.

ARTEMISIA VULGARIS.

Mugwort.

Class XIX. Syngenesia.—*Order* II. Polygamia Superflua.

Nat. Ord. Compositæ.

Gen. Char. *Involucre* ovate or rounded, imbricate. *Receptacle* naked or hairy. *Florets* of the ray subulate. *Pappus* none.

Spec. Char. Leaves pinnatifid; segments white and downy beneath. Flowers racemose, ovate. Receptacle naked.

SYNONYMES.

Greek ...	αρτεμισια ?
Latin	Artemisia vulgaris major. *Bauh. Pin.* 137. Artemisia mater herbarum. *Ger. Em.* 1103. Artemisia vulgaris. *Raii Syn.* 190. *Park. Theatr.* 90. *Lin. Sp. Pl.* 1188. *Eng. Fl.* iii. p. 409. *Eng. Bot.* t. 978.
French. ..	Armoise; Armoise commune; Herbe de la Sainte Jean.
Italian. ..	Artemisia.
Spanish ..	Artemisia; Artemisa.
Portuguese	Artemisia.
German ..	Beifusz; Beyfuss; Sant Johannis guertel.
Dutch....	Byvoet; Sint Jans kruid; Sint Jans gordel.
Bohemian.	Czernobyl.

Description.—The root is about the thickness of the finger, perennial, creeping, ligneous, and furnished with numerous strong fibres. The stem is nearly herbaceous, erect, cylindrical, channelled, branched, reddish, sometimes covered with whitish pubescence, and rises to the height of three feet or more. The leaves are alternate, pinnatifid, incised; deep green above, white and cottony beneath; the upper much less divided, and with nearly linear segments. The flowers are disposed in axillary racemose spikes; each flower is ovate, sessile, and composed of several small pale purplish florets seated on a naked receptacle. The involucre consists of a few narrow, imbricated, woolly scales. The florets of the circumference are female, subulate, bifid at the limb, and about five in number; those of the centre, or disk, are hermaphrodite, with a filiform tube and a five-cleft limb; its segments acute and revolute. The stamens are five; the filaments setaceous, and the anthers cylindrical, united into a tube. The germen is ovate, obtuse, glabrous, surmounted with a setaceous style passing through the tube of the anthers, (in the perfect florets,) tipped with a bifid revolute stigma. The fruit is an obovate pericarp, or achenium, destitute of pappus. Plate 33, fig. 4, (*a*) flower composed of several small florets; (*b*) female floret; (*c*) hermaphrodite floret.

This plant is common in Britain and in almost every climate, in waste places, the borders of fields, and under hedges. It flowers in July and August.

The name Artemisia is said by Pliny to be derived from *Artemisia* *, wife of Mausolus, King of Caria, who first discovered the virtues of this plant, or from *Artemis* †, the Diana of the Greeks. The common name, Mugwort, i. e. Mug-plant, indicates its employment by way of infusion as a medicinal drink. Parkinson thinks that it ought to be called Maidenwort; and this would certainly be more in accordance with its original designation, παρθενις. In Germany, Holland, and some other countries, it has received the name of St. John's plant ‡.

* Who also erected, in memory of her husband, a magnificent tomb, (*mausoleum*,) one of the seven wonders of the world, and for many centuries the chief ornament of Halicarnassus.

† "Quod privatìm fœminarum malis, quibus αϱτεμις, i. e. Diana præest, medeatur."—*Pliny*. Or, as Macer has expressed it in tolerable verse,

"Hujus opem fertur prios invenisse Diana,
Artemis à Græcis quæ dicitur; indeque nomen
Herba tenet, quia sic inventrix dicitur ejus.
Præcipuè morbis muliebribus illa medetur."

‡ Probably because it first comes into flower about St. John's day; on the eve of which day it is accustomed to be gathered with certain superstitious observances, and the possessor of it is thought to be secure from apparitions, diseases, and misfortunes. The coals found at the root of this plant on St. John's day, (cingulum Sancti Johannis,) either taken internally or worn round the neck as an amulet, have been regarded by

There are several species of Artemisia, five of which are indigenous to Britain; the Sea Wormwood, (*A. maritima,*) flowering on our sea-shores and in salt marshes in September; and the Common Wormwood, (*A. Absinthium,*) have medicinal properties, especially the latter. Of the foreign species the principal are: the Tartarian Wormwood, (*A. Santonica,*) an anthelmintic; the Tarragon Wormwood, (*A. Dracunculus,*) well known for its use in fish-sauce, &c.; and the Moxa Wormwood, (*A. Chinensis,*) much used by the Chinese as a cautery. Various species, called by the Swiss *Genepi,* are highly valued as medicines. In some countries Mugwort is used for culinary purposes. According to the Swedish experiments, it is disliked by animals in general, but Dr. Anderson remarks that sheep devour it with great avidity, especially the roots. The flesh of poultry, particularly of geese, is said to be rendered more tender and savoury by being stuffed with this herb.

Qualities.—The odour of the recent plant, especially of the flowering tops, when rubbed, is fragrant and aromatic; and the taste herbaceous, slightly bitter, sweetish, and tenacious. The juice gives a red tinge to litmus paper, and the aqueous infusion of the plant, which is of an obscure orange-red colour, is rendered dark brown by sulphate of iron. The flowering tops are the most vigorous, and should be selected for medicinal purposes; they yield a thin, fragrant, essential oil by distillation.

Medicinal Properties and Uses.—This plant, though almost disused in the present day, was very frequently employed by the ancients, particularly in affections of the uterus. By Hippocrates [*] it is recommended for expelling the secundines, &c.; and by Dioscorides for accelerating parturition. Galen commends fomentations, and Pliny [†] the vapour of the plant in

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the credulous as very efficacious against epilepsy. Geoffroy thinks that these coals, as they are called, are portions of old and dead roots.

[*] De Morb. Mul. lib. i.

[†] Hist. lib. xxvi. cap. 10. Who also speaks of its utility against lassitude, "Artemisiam et elisiphacum (*salviam ?*) alligatas qui habeat viator negatur lassitudinem sentire" *l. c.* Upon this Gerard observes, "Pliny saith, that the traveller or wayfaring man that hath the herbe tied about him, feeleth no wearisomnesse at all; and that he who hath it about him can be hurt by no poysonsome medicines, nor by any wilde beast, neither

decoction for similar purposes. Its emmenagogue virtues have also been asserted by the moderns, and it has been much extolled in suppressions of the menses, and lochiæ, and in hysterical complaints, either as an internal remedy or employed in baths and fomentations. Home* states that a drachm of the dried and pulverized leaves, taken four times a day, removed hysteric fits, after æther and assafœtida had been tried in vain. A decoction of the plant is used by poor persons as a remedy for intermittent fevers. The dried leaves, bruised in a mortar, and rubbed between the hands until the downy part is separated from the woody fibre, and rolled into little cones, is a good substitute for the Chinese moxa, and is much used in Japan and Cochin-China, according to Kœmpfer†, in affections of the joints. The part is first moistened and then a cone of the moxa is applied, which is set on fire at the apex and gradually burns down to the skin, producing a dark coloured spot; by repeating the process an eschar is formed, and this on separation leaves an ulcer, which may be kept open or healed as circumstances may require. Various other plants have been employed for this purpose, such as fungi, hemp, flax, the pith of the sun-flower, and of certain rushes, or cotton dipped in a solution of nitrate of potass.

The aqueous or vinous infusion of the flowering tops is the best preparation; the latter, especially, is considered tonic and emmenagogue. Hufeland states that a drachm of the powdered leaves, taken twice a day in warm beer, is very efficacious in epilepsy. A syrup and conserve are also prepared from it, which are reputed to be useful in coughs, &c. Externally, in baths or fomentations, it may be combined with feverfew, mallow, melilot, chamomile flowers, &c.; in this way it cleanses and relaxes the skin and promotes perspiration, and may thus deserve its ancient reputation of obviating fatigue and invigorating the limbs.

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yet by the sun itself; and also that it is drunke against *opium*, or the juyce of blacke poppy. Many other fantasticall deuices inuented by poets are to be scene in the works of the antient writers, tending to witchcraft and sorcerie, and the great dishonour of God; wherefore I do of purpose omit them as things unworthy of my recording to your reuiewing."

* Clin. Exper.

† Amœnit. exot. p. 589, seq.

CXXXV.

MORUS NIGRA.

Common Mulberry-Tree.

Class XXI. Monœcia.—*Order* IV. Tetrandria.

Nat. Ord. Urticeæ.

Gen. Char. Male flowers:—*Calyx* four-parted. *Corolla* none. Female flowers:—*Calyx* four-leaved. *Corolla* none. *Styles* two. *Fruit*, baccate, consisting of several one-seeded nuts, invested by the pulpy calyx.

Spec. Char. Leaves cordate, somewhat lobed, unequally serrate, scabrous above, villous beneath.

SYNONYMES.

Greek.....	*συκαμινος.*
Latin....	Morus fructu nigro. *Bauh. Pin.* 459. Morus. *Ger. Em.* 1507. *Cam. Epit.* 179. *Fuchs.* 506, c. 199. Morus nigra vulgaris. *Park. Theatr.* 1491. Morus nigra. *Lin. Sp. Pl.* 1398. *Dend. Brit.* 159.
French...	Murier; Murier noir.
Italian..	Moro; Gelso.
Spanish..	Moral.
Portuguese	Amoreira.
German..	Maulbeerbaum.
Dutch....	Moerbezieboom.
Danish...	Morbœrtræ.
Swedish...	Mulbœrtstrœd.
Bohemian.	Marusse.
Russ.....	Schelkowiza.
Persian...	Tut.
Brazil...	Tatai-iba.

Description.—The tree much branched, covered with a rough brownish-grey bark, and seldom exceeds thirty feet in height. The leaves are numerous, on short footstalks, cordate, somewhat ovate, serrated, veined, from three to four inches long and nearly as broad, deep green, and rough with minute tubercles above, paler and villous beneath. The flowers are produced in ovate, drooping catkins, of which the sterile ones are longer and more slender, each male flower is composed of four caducous, ovate, erect sepals, inclosing four filaments bearing simple anthers; the female flowers consist of four sepals, which are permanent, and ultimately become fleshy; the germen is roundish, with a short style and two linear-subulate, hirsute, erect stigmas. The fruit (called a berry) consists of several *acini*, or small dark purple berries, formed by the development of the calycine leaves over the matured germens, closely imbricated on a fleshy cylindrical receptacle; each of which is obovate, compressed, obtuse, and tipped with the remains of the style, and contains, in the midst of its succulent lobes, a single triangular-ovate, compressed, one-seeded nut. Plate 34, fig. 3, (*a*) male floret previous to the expansion of the anthers; (*b*) male floret expanded; (*c*) female floret.

The Common Mulberry is originally a native of Persia, whence it has been introduced into Italy, and thence into England, where it has been cultivated since the middle of the sixteenth century, and is now sufficiently common. It flowers in June, and the fruit ripens in September.

The generic name Morus is derived from the Greek μοϱεα, and that from the Celtic *mor*, signifying *black*. The ancients fabled that the fruit of the Mulberry, which before was white, changed to a deep red on absorbing the blood of Pyramus and Thisbe, self-slain beneath its shade.

There are a few other species, such as the White Mulberry, (*M. alba*,) so called from the colour of its fruit, the leaves of which are much used for feeding silk-worms in the south of Europe. The Dyer's Mulberry (*M. tinctoria*) is valued for its wood, which dyes yellow, and is imported under the name of Fustick-wood.

General Uses.—The wood of the Mulberry is of slow growth, but close-grained, tolerably hard, very durable under water, and may be applied to a variety of uses in turnery and carving. The inner bark is tough and fibrous, and is made into baskets, mats, cordage, ropes, and brown paper. The fruit yields, by fermentation, a pleasant wine, which is sometimes, particularly in Devonshire, mixed with cyder, and forms what is called Mulberry-cyder, which possesses a very pleasant taste and a deep red colour, similar to that of port wine. The leaves of this tree, however, are the most important as furnishing food for silk-worms (the larvæ of the *Phalœna Mori*). Hence it is extensively cultivated in the East, as well as in Italy and the South of France. Attempts have been made in England to naturalize the silk-worm, but without success. James I. endeavoured to establish a silk manufactory here, but the project after a time was given up. Some of the fine specimens of this tree in the old gardens near London are said to have been planted at that period.

The Mulberry is propagated by layers, but it may also be increased by other methods. It is generally grown as a standard in orchards, but will sooner produce fruit as an espalier or wall tree. It is remarkable that old Mulberry trees bear larger and finer fruit than the young ones, and that for some years after they begin to blossom, they put forth only stamineous or male blossoms. The tree developes its leaves at a later period of the year than almost any other, so as to be in no danger of frosts; hence it was regarded by the ancients as the wisest of trees, and by heralds as hieroglyphic of wisdom. It is recorded in sacred history, as a signal instance of the Almighty's displeasure, that "He destroyed the Mulberry trees with frosts."

Qualities.—The bark has rather a heavy odour, and an austere, bitter, subsaline taste. The fruit is inodorous, has a pleasant acidulous taste, and contains a large quantity of deep crimson red juice. The juice tinges the cuticle of a reddish purple colour, and turns black by the addition of sulphate of iron and a little water. Hermstadt found that the acidity of the fruit is owing to tartaric acid, and Dr. Thomson has detected in it jelly and mucus. According to Dr. Paris, two distinct species of colouring matter have been detected in the juice of Mulberries:—the mingled blood of the unfortunate Pyramus and Thisbe,

> "Signa tene cœdis: pullosque et luctibus aptos
> Semper habe fœtus, geminæ monumenta cruoris."
>
> *Ovid. Met.* lib. iv. 160.

Medicinal Properties and Uses.—All authors agree in attributing a laxative property to the ripe fruit of the Mulberry; the elegant deep violet-coloured juice agrees in its general qualities with other vegetable productions of a combined acid and sweet nature, not only allaying thirst, partly by refrigerating, and partly by exciting an excretion of mucus from the mouth and fauces, but producing also a similar effect in the stomach, where, by correcting putrescency, a powerful cause of thirst is removed[*]. The *rob* and *syrup* of Mulberries are both detergent, and in that light are sometimes applied to thrush in the mouth, or added to gargles for sore throats. The bark of the root is of an acrid, bitter taste, and cathartic. It has been commended against intestinal worms, either in doses of thirty grains of the powder, or of one drachm in the form of infusion[†]; and a decoction is especially recommended by Andry as a cure for tænia.

ROB OF MULBERRIES[‡].

Take of Depurate juice of Mulberries	four parts;
White sugar	one part.

Mix, and boil to the consistence of honey.

SYRUP OF MULBERRIES[§].

Take of the juice of Mulberries, strained	one pint;
White sugar	two pounds and a half.

Dissolve the sugar in the juice with a gentle heat, then set aside for twenty-four hours; afterwards remove the scum, and pour off the clear liquor.

DECOCTION OF MULBERRY-ROOT BARK[||].

Take of Mulburry root bark	three drachms.
Water	half a pint.

Boil for half an hour, and strain.—Sufficient for two doses, to be taken on an empty stomach.

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[*] Woodville's Med. Bot. vol. iv. p. 713.

[†] Bomare, Diction. d'Hist. Nat. tom. iv. p. 290.

[‡] Pharmacopœia Danica, 1805.

[§] Pharmacopœia Londinensis, 1836.

[||] Andry, De la generation des vers dans le corps de l'homme, p. 172.

CXXXVI.

VERBASCUM THAPSUS.

Great Mullein.

Class V. Pentandria.—*Order* 1. Monogynia.

Nat. Ord. Solaneæ.

Gen. Char. *Calyx* five-parted. *Corolla* rotate, irregular. *Stamens* declinate, often hairy. *Capsule* of two valves and two cells.

Spec. Char. Leaves decurrent, woolly on both sides. Stem simple. Flowers in a dense spicate raceme. Stamens unequal, the two longer glabrous.

SYNONYMES.

Greek	φλομος ; φλονος.
Latin	Verbascum mas, latifolium, luteum. *Bauh. Pin.* 239. *Raii Syn.* 287. Tapsus barbatus. *Ger. Em.* 773. Verbascum album vulgare, sive Thapsus barbatus communis. *Park. Theatr.* 60. Verbascum Thapsus. *Lin. Sp. Pl.* 252. *Eng. Fl.* i. p. 308. *Eng. Bot.* t. 549.
French	Bouillon blanc; Molene; Bonhomme; Herbe de Sainte Fiacre.
Italian	Tasso barbasso; Verbasco.
Spanish	Gordolobo; Verbasco.
Portuguese.	Verbasco bianco.
German	Wollkraut; Königskergenkraut; Himmelbrand.
Dutch	Wollekruid; Toortsen; Konings-kaarsen.
Danish	Kongelys.
Swedish . . .	Kungsljis.
Polish	Dzlewanna ziele.
Russ.	Zaarskii skipetr.

Description.—The root is biennial, fusiform, whitish, hard, and somewhat ligneous, sending off here and there little rootlets. The stem is erect, simple, firm, straight, cylindrical, leafy, angular, winged, covered with a thick greyish pubescence, and varies in height from three to five feet. The radical leaves are very large, spreading, and sustained on short petioles; the cauline ones decurrent, sessile, and gradually decreasing in size; the whole are alternate, ovate or oblong, attenuate at the base, crenulate at the margin, wrinkled above, very thick, and covered on both sides with dense, whitish, branched, intricate, woolly hairs. The flowers form a terminal, long, cylindrical, dense, spike-like raceme. The calyx has five, deep, ovate, acute divisions, with lanceolate bracteæ at the base. The corolla is large, rotate, or somewhat funnel-shaped, golden yellow, rarely white, consisting of a short thick tube and a five-parted limb, the segments obovate, obtuse, somewhat unequal. The five stamens are inserted into the tube, shorter than the limb, the three upper filaments shorter, nearly erect, hairy, the two lower longer, glabrous; the anthers oblong, two-lobed, orange-coloured. The germen is roundish, tomentose, obtuse, surmounted by a filiform style and a clavate stigma. The fruit is an ovoid capsule, surrounded by the calyx, with two cells and two valves opening at the summit and containing numerous small angular seeds. Plate 34, fig. 1, (*a*) calyx and pistil; (*b*) corolla opened; (*c*) pistil; (*d*) capsule; (*e*) transverse section of the capsule; (*f*) seed magnified.

This handsome species of Mullein is frequent on banks, waste ground, and by hedges, particularly in a light sandy, gravelly, or calcareous soil *, and occurs in similar situations throughout Europe. It flowers in July and August.

This plant is most probably the φλομος of Dioscorides, so called from φλοξ, φλογος, a *flame*, because the stems have been used for torches, hence also one of the English synonymes, *High Taper*. Verbascum is an alteration of *barbascum*, from *barba*, a *beard*, on account of the woolly hairs with which the plant is covered. It is denominated *Thapsus* from its native place, the isle of Thapsos. The English term, Mullein, seems to be derived from the French *Mollene,* and that from *moelleux*, *soft*, in allusion to the texture of the leaves. It has also been called provincially Ladies' Foxglove, Hare's-beard, and Cow's Lungwort.

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* It is interesting to the naturalist to observe the companionship of plants. The Mullein is often found associated in the same localities with the Foxglove; and there is not only a similarity between the leaves of the two plants, but the irregular corolla and unequal stamens of Verbascum show the affinity of the *solaneæ* (pentandria, monogynia) with the *scrophularineæ* (didynamia, angiospermia).

There are five other native species of Mullein. The dark Mullein, (*V. nigrum,*) distinguished by its oblong-cordate, stalked, crenate, nearly glabrous leaves, is equally common with the above. The Hoary Mullein (*V. pulverulentum*) is one of the most magnificent of British herbaceous plants, its flowers forming a golden pyramid nearly a yard high. There are several foreign species, but it is doubtful whether they are all permanent, as the genus is very apt to produce hybrids; those between *V. Thapsus* and *V. nigra* are not uncommon.

Qualities and general Uses.—Linnæus states that this plant is never eaten by cattle. It is given medicinally in the pulmonary diseases of cows; hence the name *Cow's Lungwort.* Bechstein affirms that the roots reduced to powder and mixed with malt-meal speedily fatten poultry. The whole plant tied up in bundles is used in German granaries to prevent the depredations of mice, for which purpose it is said to be very effectual. The stalks covered with pitch have been used as flambeaux. The flowers afford a delicate though not durable yellow to wool and cotton; an infusion of them was used by the Roman ladies to tinge their dresses of the golden hue once so much admired in Italy. Boccone mentions that the seeds of this plant thrown into a fish-pond stupify the fish, so that they may be taken with the hand. The down which covers the leaves and stem may be used as tinder or moxa.

The physical qualities of Mullein are rather feeble. The leaves have a weak, subnarcotic, rather unpleasant odour, and an herbaceous, bitterish taste. The recent flowers have a similar odour, but when dried they are more pleasant, and their odour is compared by Bergius * to that of the Florentine Iris; their taste is agreeable, sweetish, and mucilaginous. The aqueous infusion of the leaves and flowers reddens turnsol, and takes a greenish black hue with sulphate of iron. Morin states that the flowers yield by analysis a yellowish volatile oil, fatty matter, analogous to oleic acid, phosphoric and malic acids, incrystallizable sugar, gum, chlorophylle, yellow resin, and various salts. We have no analysis of the seeds; if it be true that they stupify fish, they must contain a narcotic principle, which might probably be obtained by a spirituous tincture or aqueous extract.

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* Mat. Med. tom. ii. p. 117.

Medicinal Properties and Uses.—The leaves and flowers of the Mullein are anodyne and emollient, and considerable praise has been granted to them both, as an internal as well as an external remedial agent. Dr. Gilibert also attributes to Mullein a narcotic property, but sufficiently masked as to do away any apprehension of ill-consequences; this narcotic quality is, however, doubted by many, although the stupifying effect which the seeds have upon fish tends to confirm the opinion of Gilibert. Pulmonary affections and diarrhœas are the chief complaints in which it is internally used. Schröder found it beneficial in diseases of the chest, cough, and spitting of blood. Dr. Home [*] esteems the decoction of the leaves particularly "useful in diminishing or stopping diarrhœas of old standing, and often in easing the pains of the intestines." Indeed, it is one of the most effectual remedies we have for alleviating the pain of piles and tenesmus supervening dysentery, whether used internally in fomentations, or in clysters. The down of the leaves has been used as moxa, for which purpose it answers very well. By the peasantry they are not unfrequently boiled with lard, and made into an ointment for dressing recent wounds. An infusion of the flowers is of great service in allaying irritation of the mucous membrane of the intestines, for relieving sensations of heat in the chest, for hooping and convulsive coughs in children, in colic, heat of urine, and in several spasmodic diseases [†]; against hæmorrhages [‡]; for internal ulcers, phthisis, and gout [§]. A conserve of the flowers, or a water distilled from them, is used on the continent as an application to ringworm and other cutaneous diseases, to allay the itching. Externally, fomentations or poultices made from the leaves or flowers beat up with linseed meal are excellent applications to burns and scalds, to boils, whitlows, excoriations, and for promoting the resolution or suppuration of glandular indurations *.

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[*] Home, Ex. and Hist. sect. 22.

[†] Flore Medicale, tom. ii. p. 59.

[‡] Boerhaave, Hort. L. B. p. 307.

[§] Risler, Diss. de Verbasco, p. 15.

DECOCTION OF MULLEIN †.

Take of fresh leaves of Mullein .... two ounces ;
Water .... two pints.

Boil for half an hour, and strain —Dose, four ounces every three hours.

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* Murray, Appar. Med. tom. i. p. 725.
† Home, Lib. et loc. cit.

CXXXVII.

SINAPIS NIGRA.

Common Mustard.

Class XV. TETRADYNAMIA.—*Order* II. SILIQUOSA.
Nat. Ord. CRUCIFERÆ.

GEN. CHAR. *Pod* two-valved (sometimes of two joints, of which the upper one is without valves). *Seeds* subglobose. *Cotyledons* conduplicate. *Calyx* spreading.

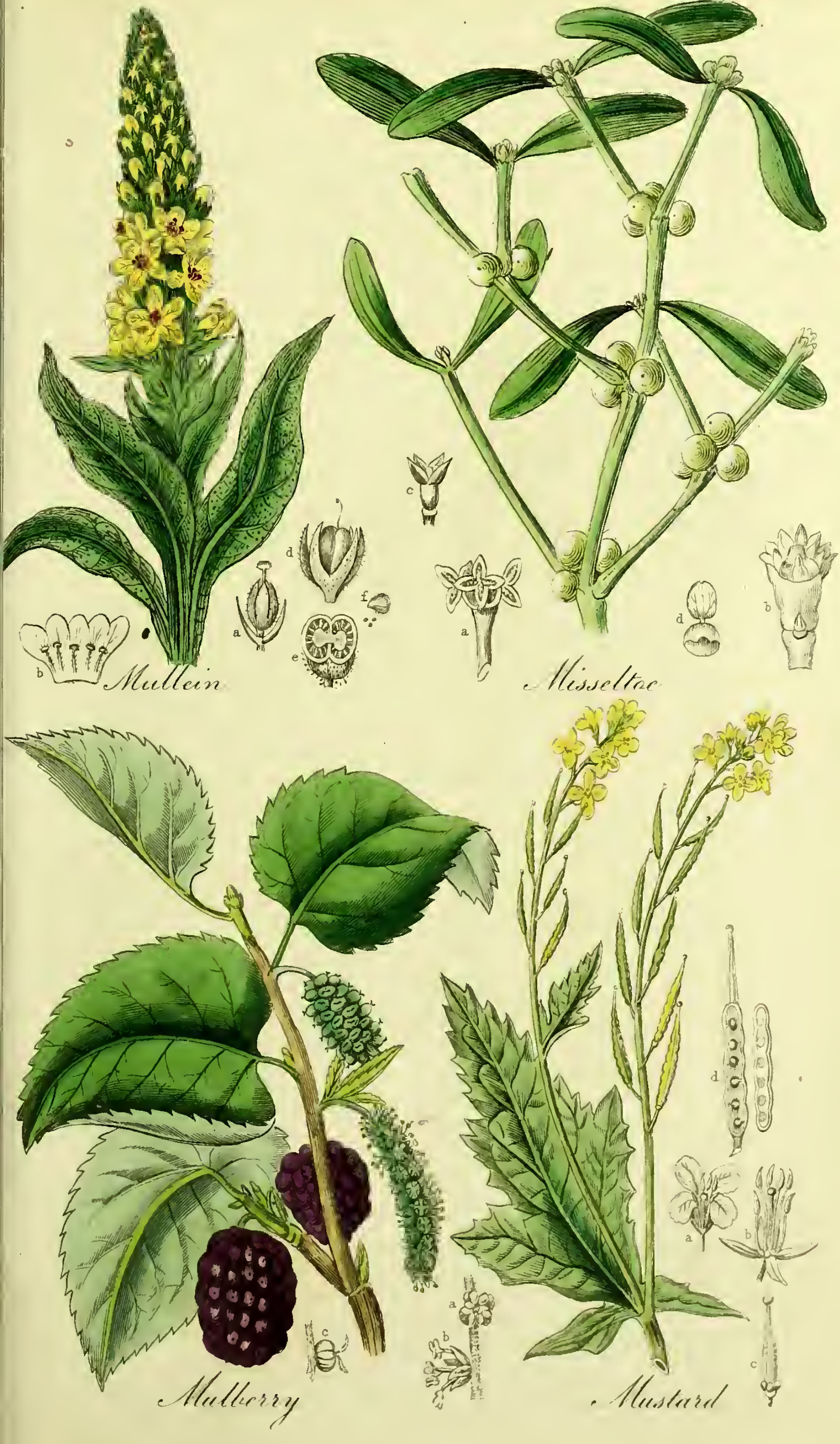
SPEC. CHAR. Pods smooth, even, somewhat tetragonal, appressed. Lower leaves lyrate; upper ones linear-lanceolate, entire, glabrous.

SYNONYMES.

Greek	σίναπι; σίνηπι; ναπί.
Latin.....	Sinapi rapi folio. *Bauh. Pin.* 99. Sinapi sativum secundum. *Ger. Em.* 244. *Raii Syn.* 295. Sinapi sativum. *Park. Parad.* 502. Sinapis nigra. *Lin. Sp. Pl.* 933. *Eng. Fl.* iii. p. 222. *Eng. Bot.* t. 969. *De Cand. Syst.* vol. ii. p. 608.
French	Moutarde; Moutarde noir; Séneve.
Italian	Senapa; Mostarda.
Spanish....	Mostazo; Mostazo negro.
Portuguese.	Mostarda; Mostardeira.
German ...	Senf; Schwarz senf.
Dutch	Mostaart; Mosterd.
Danish	Senep.
Swedish ...	Senap.
Polish	Gorczyka.
Russ......	Gortschiza.
Arabic....	Kabar.

DESCRIPTION.—The root is annual, small, whitish, descending, furnished with numerous capillary fibres. The stem is erect,

Plate 34.


Mullein
a
b
d
e
f
Misseltoe
a
b
c
d
Mulberry
a
b
c
Mustard
a
b
c
d

cylindrical, somewhat hairy, branched, and three or four feet in height. The leaves are alternate, petiolate, dark green; the lower ones lyrate, with obtuse, unequally toothed lobes; the uppermost linear-lanceolate, smooth, entire, and hanging down. The flowers are yellow, small, and are disposed in a long terminal raceme, on short peduncles. The calyx consists of four oblong, straight, spreading sepals. The corolla is cruciform; the petals obovate, rounded, spreading, with short erect claws. The stamens are tetradynamous, with simple erect filaments, glandular at the base, and supporting oblong anthers. The germen is cylindrical, with a small short style tipped with a capitate stigma. The pods or silicles are small, nearly smooth, obtusely quadrangular, appressed to the stem, and terminated by a very short beak, or rather by the persistent style and stigma. The seeds are nearly globose, numerous, shining, dark brown, and arranged in a single series. Plate 34, fig. 4, (*a*) entire flower slightly magnified; (*b*) calyx, stamens and pistil; (*c*) pistil; (*d*) silique, or pod, opened to show the disposition of the seeds.

This plant is a native of the south and middle of Europe, and is not uncommonly found wild in this country under hedges and in waste places, flowering in June and July.

The term Sinapis is derived from the Greek σιναπι *, (παρα του σινεσθαι τους ωπας,) from its pungency affecting the eyes. Theis states that the origin of the word may be traced to the Celtic *nap*, a general name for plants of the rape kind. Mustard is said to be an abbreviation of *mustum ardens*, *hot must*; the sweet must of new wine being formerly an ingredient in preparing mustard for dietetic purposes.

The White Mustard (*S. alba*) is readily distinguished from the above by its larger flowers, and rough, turgid, spreading pods, furnished with a long beak, and it is seldom more than half as high as the Common Mustard. The Wild Mustard, or Charlock, (*S. arvensis*,) which is often too frequent in corn fields, is readily known by its turgid and knotty pods having several angles, as well as by its general aspect.

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* It is called ναπι by Theophrastus; and Pliny (Hist. lib. xix. c. 3) states that it had the same designation among the Athenians.

This plant is cultivated to a great extent in Durham. It is sown in the fields in a rich, well-pulverized soil in March and April, and affords a crop of ripe seed in July and August, when it is stacked and threshed like other grain. In common with other cruciferous plants it is exhausting to the soil, and the seed will remain for years buried at the depth of three or four inches without germinating until it is brought to the surface.

QUALITIES AND GENERAL USES.—The well-known salad called Mustard is commonly raised from the *S. alba*, but it may also be procured from *S. nigra*; and the tender leaves of the latter are sometimes used as greens early in the spring. This species is almost exclusively used for grinding into flour of mustard *, and the black husks of the seeds are separated by very delicate machinery. Mr. Neill observes that, "in preparing mustard powder for the table, it makes the best appearance when rich milk is used; but the mixture in this case does not keep good for more than two days."

The seeds in their entire state are nearly inodorous, but when bruised they have a pungent, penetrating odour, and a warm, bitterish, acrimonious taste. The unbruised seeds macerated in boiling water, yield only an insipid mucilage, which, like that of linseed, resides in the integuments; but when bruised water takes up the whole of their active matter, though it is scarcely imparted to alcohol. The acrimony appears to reside in a volatile oil, which may be obtained by distillation; they also afford by expression a bland fixed oil, of a sweetish taste, which is purgative in large doses; and the cake or marc left after expression is considerably more pungent and acrid than the unpressed seeds. Dr. Cullen observed that by steeping the powdered seeds in vinegar their activity is much increased. "When the seeds are triturated with lime and a few drops of water, ammonia is plentifully evolved. Hence their constituents appear to be starch, mucus, a bland fixed oil, an acrid volatile oil, and an ammoniacal salt."* Where the seed putrefies it exhales the odour of sulphuretted hydrogen.

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* Several other plants of the same natural order may be used as substitutes for the Common Black Mustard. The Wild Radish, or Jointed Charlock, (*Raphanus Raphanistrum*,) often separated in the process of clearing grain by farmers, is said to be frequently disposed of as Durham Mustard. Professor Brande (Man. Pharm.) observes that the bright yellow powder sold under the name of *flour of Mustard*, for the table, is a compound of black and pale Mustard seed, cayenne pepper, wheat flour, and turmeric.

Medicinal Properties and Uses.—Mustard is universally allowed to be stimulant, diuretic, emetic, and rubefacient. It is found to promote appetite, assist digestion, attenuate juices, and by stimulating the fibres, to prove a general remedy in paralytic, chronic rheumatic, and arthritic affections †. In paralysis of the tongue a cold infusion of the seed in white wine, with a small portion of lavender drops, is to be frequently retained in the mouth, the patient at the same time taking two or three tea-spoonsful twice or thrice a-day ‡. In addition to its stimulating qualities, it frequently, if taken in considerable quantity, proves laxative §, and increases the urinary discharge; hence in the days of Mead || it was extensively used in this country, combined with broom tops, for the cure of dropsy. As a stimulant, Dr. Paris ¶ considers it serviceable only in such cases as are marked by alimentary torpor. In cases attended with muscular irritability he considers it unquestionably useful; and that he has known it insure a regular alvine discharge, and correct that species of diarrhœa which attends a diseased condition of the mucous surfaces. As to the efficacy of Mustard in ameliorating scurvy, and its attending symptoms, authors are by no means united; nevertheless, Ray ** reports that it has proved beneficial in numerous cases, being taken infused in white wine. The continued use of this article no doubt eventually acts on the whole economy of the human frame; and on that account it may prove beneficial, not only in scorbutus, but also in cases of anarexia, hypochondriasis, and chlorosis, particularly in atonic and lymphatic subjects: on account of this diffusible action of Mustard, it was used by

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* Thomson's Dispensatory, 1836, p. 592.

† Adair, Med. Comment. 1783, art. 2.

‡ Thomson, Med. Consult. on var. Diseases.

§ Cullen, Mat. Med. vol. ii. p. 171.

|| Mead, Monit. et Præc. Med. p. 77.

¶ Paris, Pharmacologia, 8th edit. p. 670.

** Ray, Hist. Plant. p. 803.

Dioscorides * and the ancients in the diseases just named; with the same view, Bergius † used it effectually for curing intermittents, directing a spoonful of the whole seed to be swallowed three or four times a day during the absence of the fever; and when the disease was obstinate he added powdered Mustard to Peruvian bark; but it should not be employed in very robust subjects, since a most ardent fever and death may be the result ‡. In putrid fevers it has also been celebrated, either alone, or in conjunction with bark §.

Externally, Mustard is extensively used in the form of poultice and embrocation, the former more particularly as a counter-irritant, the latter as a rubefacient. Mustard poultices, or *sinapisms* as they are called, are used in cases of inflammation of the brain, retrocedent gout, apoplexy, the low muttering delirium of fevers, or whenever the powers of life are fast ebbing. They are usually in these cases applied to the soles of the feet, or the wrists and calves of the legs. When placed over the region of the stomach, they often allay obstinate vomitings and hiccup; are occasionally employed to stimulate variolous and morbid eruptions, to restore checked measles and scarlet fever, and to counteract pleurisy, and other internal inflammations. In rubefacient embrocations they are employed, with friction, to paralytic, arthritic, and rheumatic limbs, and to some indolent glandular indurations. Mustard added to baths has afforded great relief in high degrees of spasmodic asthma, by immersing the arms to the shoulders for twenty minutes ||.

MUSTARD WHEY ¶.

Take of Milk	two pints;
Mustard seeds, bruised	two ounces.

Boil together till the curd falls to the bottom of the vessel, and filter. Dose, from a quarter to half a pint three times a day.

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* Dioscorides, Mat. Med. lib. 2. cap. 184.

† Bergius, Mat. Med. p. 581.

‡ Swieten, Comm. tom. ii. p. 31.

§ Callisen, in Act. Soc. Roy. Med. Hafn. vol. i. p. 364, sq.

|| Gazette of Health, vol. i. p. 210.

¶ Dispensatorium electorale Hassiacum, 1806.

WINE OF MUSTARD [*].

Take of	Mustard seeds, bruised................	one ounce;
	Wine	two pints.

Macerate for six hours, and decant. Chiefly used externally to dropsical tumefactions.

INFUSED OIL OF MUSTARD [†].

Take of	Mustard seeds, from their oil by expression..	one ounce;
	Oil of Rosemary........................	eight ounces.

Digest for three days and filter. Used as a liniment to paralytic limbs, &c.

MUSTARD CATAPLASM [‡].

Take of	Linseed, powdered............	of each half a pound.
	Mustard seed, powdered........	
	Boiling vinegar, as much as may be sufficient to give the consistence of a poultice.	

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[*] Pharmacopœia Herbipolitana, 1796.

[†] Pharm. Batava, 1811, ed. Niemann.

[‡] Pharmacopœia Londinensis, 1836.

CXXXVIII.

URTICA DIOICA.

Common Nettle.

Class XXI. MONŒCIA.—*Order* III. TETRANDRIA.

Nat. Ord. URTICEÆ.

GEN. CHAR. Male flowers:—*Perianth* single, of four leaves, containing the cup-shaped rudiment of a germen. Fertile flowers:—*Perianth* single, of two leaves. *Pericarp* one-seeded, shining.

SPEC. CHAR. Leaves ovate, acuminate, cordate at the base. Clusters of flowers much branched, in pairs, mostly diœcious.

SYNONYMES.

Greek....	ακαληφη.
Latin....	Urtica urens maxima. *Bauh. Pin.* 232. Urtica urens. *Ger. Em.* 706. Urtica racemifera major perennis. *Raii Syn.* 139. Urtica major vulgaris, et media sylvestris. *Park. Theatr.* 440. Urtica dioica. *Lin. Sp. Pl.* 1396. *Eng. Fl.* iv. p. 135. *Eng. Bot.* t. 1750.
French...	Ortie; Grande Ortie; Ortie dioïque.
Italian...	Ortica maggiore.
Spanish..	Ortiga mayor.
Port.....	Ortiga major.
German..	Nessel; Brennessel; Grosse Brennessel.
Dutch....	Groote Netelen; Groote Brandenetel.
Danish...	Stor Brœndenelde.
Swedish..	Brœnnaetsla; Raszla.
Polish....	Pokrzywa.
Russ.....	Kropeiwa Schikowka.

DESCRIPTION.—The root is perennial, creeping, ligneous, and fibrous. The stems are erect, somewhat branched, quadrangular, hispid with rigid, articulated pungent hairs, and from two to four feet in height. The leaves are opposite, petiolate, ovate-acuminate, cordate at the base, deeply serrated, rugose, and dull dark green above, paler beneath, hispid on both sides, with two small opposite concave reflexed stipulæ at the base of the petiole. The flowers are disposed in long, pendent, somewhat branched clusters, frequently two from the axil of each leaf, the male and female on separate plants, (diœcious,) seldom monœcious. The male flowers have a perianth of four ovate, obtuse, concave, spreading segments, and four setaceous filaments * tipped with ovate-gibbous, two-celled anthers, and a rudimentary glandular germen between the filaments. The female flowers consist of a perianth of two ovate, obtuse, pilose leaves †, and a superior, ovate, glabrous germen, terminated by a sessile, downy, spreading stigma. The fruit is an ovate, compressed, polished nut, containing a single seed, and enveloped by the persistent perianth. Plate 35, fig. 1, (*a*) male flower of the natural size; (*b*) female flower; (*c*) male flower magnified; (*d*) anther magnified; (*e*) female flower magnified; (*f*) ripe fruit; (*g*) the same divested of the calyx.

The Nettle is well known as one of the most common plants in waste places, and under walls and hedge banks. It flowers in July and August.

The generic name is derived from *uro, to burn*, in allusion to its stinging property. The common name has a similar meaning, being merely an alteration of needle, in Anglo-Saxon *needl*, obviously referring to the needle-like stings of the plant.

The other species of Nettle indigenous to Britain are the small Nettle, (*U. urens*,) characterized by its elliptical leaves, with about five nearly parallel ribs, and nearly simple racemes or clusters: and the Roman Nettle, (*U. pilulifera*,) distinguished by its ovate leaves, with transverse nerves, and fertile flowers in globose heads; it grows on waste ground near the sea, is more rare, and has more venomous stings than the common nettle. But the effects of the stings of the European species are trifling compared with some of the exotic, such as *U. crenulata* and *stimulans*, and especially one, a native of Timor, which is called *Daoun setan*, or Devil's leaf, said to produce the most intolerable pain, tetanus, and sometimes death.

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* The filaments are incurved at first, but they expand elastically at the anthesis or opening of the flowers; the anthers also discharge the pollen with elasticity.

† More correctly of four leaves, two of which increase in size with the matured ovary, while the other two remain in their original state.

The structure of the sting of the nettle is an interesting object beneath the microscope. The stings bear considerable resemblance to the poison-fangs of the rattle-snake, each consisting of a tube with a very fine orifice, widening at the lower part into a chamber or receptacle, at the base of which, among the cellular substance of the plant, is seated a gland. The gland secretes a juice more or less acrid and venomous, which is collected in the hollow receptacle. When the sharp point of the stilet or tubular hair penetrates the cuticle, the pressure on the hollow chamber beneath forces up the fluid contained in it through the tube, and thus irritates and inflames the skin *.

QUALITIES AND GENERAL USES.—The tops of the common Nettle are boiled and eaten in many places as greens †, and are said to be not only nutritive, but slightly aperient; they are boiled along with oatmeal, in the Hebrides. In the Western Islands of Scotland, a rennet is prepared, by adding a quart of salt to three pints of a strong decoction of Nettles; a table spoonful of which is said to be sufficient to coagulate a quart of milk. The fresh herb boiled and reduced to a paste, is used for feeding poultry, and in some places young turkeys are fed almost exclusively upon it. When recent it is refused by horses, cows, goats, sheep, and swine, but is eagerly devoured by the ass. When dry it affords an excellent forage for cattle, and is reputed to increase the milk of cows, and to be a preservative against the contagious distemper affecting horned cattle. The leaves are the only food of the caterpillars of the beautiful butterflies Atlanta, Paphia, and Urticæ; they are the principal food of the Io, and the occasional food of Comma album and innumerable other insects which may be one cause of the plant being distasteful to cattle. Murray, after Hagstrom, states that the Nettle planted in the neighbourhood of bee-hives, drives away frogs, which are said to be inimical to the swarming of those insects, and that a frog plunged into a vessel containing a decoction of this plant is soon destroyed. The filamentous part of the stems, dressed in a similar manner to flax and hemp, may be made into a kind of coarse cloth or canvass. The Kamschatdales and other inhabitants of the North, have employed the stalks for a long period in the manufacture of cordage, cloth, and lines which they use for fishing. Paper has also been made from the rind as well as from the woody substance of the stalk. The seeds on expression yield an oil, which may be used for burning in lamps. The roots boiled with alum will dye yarn of a yellow colour.

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* See Hooke's Micograph. p. 142, obs. 25.

† "Nae doubt I should understand my ain trade of horticulture, seeing I was bred in the parish of Dreep-daily near Glasco, where they raise lang-kail under glass, and force the early *nettles* for their spring kail." *Andrew Fairservice*, in *Rob Roy*.

The recent plant is almost destitute of odour, and has a weak, bitterish, herbaceous taste. It is reputed to be slightly astringent and styptic, and the expressed juice slightly inspissated, has a strong subsaline taste. The seeds contain an oily matter.

MEDICINAL PROPERTIES AND USES.—The Nettle has been long celebrated in different diseases, either to excite the skin locally, or to affect the nervous system generally. Internally in infusion or decoction, the herb has been employed in consumption *, spitting of blood †, and uterine hemorrhage ‡; but notwithstanding these authorities, we are disposed to believe that the reputed beneficial effects rest more upon hypothesis and surmises than upon any inherent property of the remedy. The root and seeds were esteemed by Ray in pulmonary diseases; and a decoction of them in milk is a common remedy in Germany for intestinal worms §. Externally, *urtication*, or flogging with nettles, has been beneficially used in chronic rheumatism, and loss of muscular power or sensibility, and was with that view recommended by Aretæus|| against lethargy; by Celsus ¶, for paralysis of the limbs; and by Piso**, to the arms, thighs, and calves, against comatose fevers. The bruised herb or juice applied to the nostrils, is said to suspend bleeding from the nose ††; and by the peasants of our own country, the leaves are not infrequently placed on the roof of the mouth with the same intent. Lastly, made into a poultice, they gently stimulate gangrenous and malignant ulcers, and infused in water, make an excellent gargle for relaxation of the palate and uvula.

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* Lange, De Remed. Brunsv. dom. p. 240.

† Amatus Lusitanus, Lazerme, Chomel, Scopoli, &c.

‡ Peyroux, Observ. de Med. p. 74.

§ Berlin, Samml. zur Beförder, d'Arzneyw. vol. vi. p. 380.

|| Aretæus, Curat. acut. lib. i. cap. 2, ed. Boerh. p. 80.

¶ Celsus, De Med. lib. iii. cap. 27.

** Homorbonus Piso, in spicileg. curat. p. 6.

†† Sartorius, De admiranda narium hæmorrh. *Altdorff.* 1638, p. 19.

CXXXIX.

ATROPA BELLADONNA.

Deadly Nightshade, or Dwale.

Class V. PENTANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. SOLANEÆ.

GEN. CHAR. *Calyx* five-parted. *Corolla* campanulate, the lobes equal. *Stamens* distant. *Berry* superior, of two cells.

SPEC. CHAR. Stem herbaceous. Leaves ovate, undivided. Flowers axillary, pedunculate.

SYNONYMES.

Greek	στρυχνος μανικος. *Dioscoridis.*
Latin	Solanum Melanocerasus. *Bauh. Pin.* 166. Solanum lethale. *Ger. Em.* 340. *Park. Theatr.* 346. Belladonna. *Raii Syn.* 265. Atropa lethalis. *Salisb. Prod.* 132. Belladonna trichotoma. *Mœnch. Meth.* 179. Atropa Belladonna. *Lin. Sp. Pl.* 260. *Eng. Fl.* i. p. 316. *Eng. Bot.* t. 592.
French	Belladone; Morelle Furieuse.
Italian	Belladonna.
Spanish	Belladonna; Belladama.
Port.	Belladonna.
German	Tollkraut; Tollkirsche; Dollkraut; Wolfskirsche; Waldnachtschatten.
Dutch	Doodkruid; Dolkraut; Dolle Nagtschade.
Danish	Natskade.
Swedish	Wargbaer.
Polish	Wilcza wisnia; Tesak; Psinki.
Russ.	Beschenaja wischnja.
Persian	Rubah tarbuc.
Arabic	Inubus saleb.
Hindoost.	Sagunggor.

Description.—The root is perennial, vivacious, long, thick, creeping, branched, fleshy and of a yellowish colour. The stems are herbaceous, cylindrical, erect, pubescent, dichotomously branched, often tinged with purple, and rising to the height of three feet or more. The leaves are shortly petiolate, in opposite pairs of unequal size, some very large, ovate, somewhat elliptical, acute, smooth and soft, veiny, and of a lurid green colour. The flowers are solitary, axillary, drooping, supported on a round viscid peduncle, of about the same length as the flower. The calyx is deeply divided into five ovate, acuminate, persistent, viscous segments. The corolla is campanulate, pubescent, of a lurid glossy purple externally; the tube short, whitish, somewhat ventricose; the limb divided into five equal, ovate, acuminate, somewhat recurved segments. The five stamens are about as long as the corolla, with the filaments inserted into the tube, incurved at the summit, pubescent below, supporting roundish, ovate, two-lobed anthers. The germen is superior, spheroidal, with a groove on each side, and a nectariferous gland at the base, supporting a simple declined style, at first shorter than, ultimately as long as the corolla, terminated by a capitate greenish stigma. The fruit is a black glossy berry, about the size of a small cherry, subtended by the persistent calyx, divided into two cells, containing several reniform seeds, attached to a placenta, and surrounded by pulp. Plate 35, fig. 2, (*a*) corolla opened to show the stamens; (*b*) pistil; (*c*) transverse section of the berry; (*d*) seed magnified.

This plant is a native of Europe as far north as Norway, growing on mountains, in shady defiles, copses, and hedge-rows; but is not found in Sweden. In this country it is perhaps not truly indigenous, being generally met with near towns and the ruins of ancient buildings, particularly in places occupied by the Roman army, or near Roman encampments or fortifications, which encourages the supposition that it was introduced into this country by the Romans. It has been found at Wisbeach, in the Isle of Ely; near Royston, Hertfordshire; Box Hill, near Dorking, Surrey; and very abundantly in the vicinity of the ruins of Furness Abbey, on which account its place of growth is called the Vale of Nightshade. Mr. Curtis* observes, "I have frequently noticed it in many of the chalk-pits in Kent; and on Keep Hill, near High Wycombe, Buckinghamshire. Close by the spot where I observed it, there chanced to be a little boy; I asked him if he knew the plant? He answered, 'Yes; it was *naughty man's cherries.*' I then inquired of him if he had eaten any of the berries? He said 'he had, with several other children from an adjoining poor-house, and that it made them all very sick, but that none of them had died.'"

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* Flora Londinensis, vol. i.

The Deadly Nightshade flowers in June and July, and the berries ripen in September.

The name of the genus has been very appositely bestowed in honour of *Atropos*, one of the Fates, whose office it is to cut the thread of human life. The specific name is borrowed from its Italian appellation, *Belladonna*, signifying *beautiful lady*, from the use made of it by the ladies as a cosmetic. The old names *lethale*, *maniacum* and *furiosum* allude to the madness and delirium occasioned by the plant when it is taken in an over dose. Dioscorides calls it στρυχνος μανικος, and some writers consider it the Mandragora of Theophrastus. Its English name, *Dwale*, is derived from the old provincial word *dwaule*, (*dwaelen*, Dutch,) *to wander, to be delirious.*

A beautiful bright green colour is prepared from the berries for the use of miniature painters, and the ripe juice imparts a fine durable purple to paper.

Qualities.—The whole plant has a feeble odour of the nauseous kind. The root and leaves have a *fade* or insipid taste at first, which soon becomes nauseous and somewhat acrid, and is not lost in the dried plant. The taste of the recent berries is insipid, sweetish, and sub-astringent. Vauquelin found that the leaves contain a substance resembling animal albumen, salts with a base of potass, and a bitter principle on which its narcotic properties depend; and which has since been ascertained by Brande to be an alkali, which he calls *Atropia.* He obtained it by boiling the leaves in a very dilute sulphuric acid, filtering the decoction and supersaturating it with potass, which occasions a crystalline precipitate of impure atropia. It may be rendered pure and white by repeatedly dissolving it in dilute sulphuric acid, and precipitating by potass *. The seeds yield the largest proportion of this principle, but the dried and powdered root is usually employed, and is said to afford no more than one three-thousandth part of pure atropia.

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* Schweigger, Journ. xxviii.—For an improved method of obtaining it by Mein, in consequence of the discovery of Runge, that its properties are destroyed by alkalies, see *Journ. de Pharm.* xx. p. 87; or Dumas, *Chim. App. aux Arts,* v. 804.

Poisonous Properties.—Sheep, rabbits, goats and swine eat the foliage of this plant with impunity, but it is highly poisonous to the human subject. The berries having a beautiful appearance and sweet taste, are tempting to children, and when swallowed have produced alarming effects, but their virulence has probably been exaggerated, as several persons have swallowed three or four without experiencing any bad consequence*. If proper remedies are employed, they seldom prove fatal, even in large doses †.

The first symptoms produced by an over dose are, dryness in the throat, nausea, a kind of intoxication, vertigo, delirium, which is generally extravagant and commonly of a pleasing kind, accompanied with immoderate fits of laughter, sometimes with complete loss of voice; the pupil is dilated and insensible; these effects are sooner or later followed by a state of lethargy, which, if relief is not afforded, terminates in death. Tremors, swelling of the face, locked jaw, and subsultus tendinum are occasionally present, but convulsions are rare ‡. Hence Belladonna is ranked among the narcotic acrids, exerting not only a local action, but affecting remotely the brain, the spine, and the heart.

The peculiar poisonous qualities of this plant have been known from an early period, as appears from the epithets applied to it by the ancients. Its power of causing mania, or a species of intoxication, is supposed to be alluded to by Shakspeare in the speech of Banquo to Macbeth,—

> "Or have we eaten of the insane root,
> That takes the reason prisoner."

There can be no doubt that it was the plant resorted to by the Scotch under Macbeth, when, under pretence of a truce, they sent bread and a mixture of wine and ale impregnated with poison to the troops of Sweno, who, after partaking of the treacherous gift, fell into a lethargic sleep, and were easily massacred by their enemies §. At a much earlier period, its potent oblivious effects appear to have been experienced by the Roman soldiers during their retreat under the command of Anthony from the Parthians; thus described by Plutarch in his account of the Parthian war. "They who sought for herbs, obtained few that they had been accustomed to eat, and in tasting unknown herbs, they found one which occasioned madness and death. He that had eaten of it lost entirely his memory and his senses, and employed himself busily in turning about all the stones he could find, as if intent upon some very important pursuit. The camp was full of unhappy men *bending to the ground* *, and digging up and removing stones, till at last they were carried off by a bilious vomiting, when wine, the only antidote, was not to be procured."

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* Gilibert, Dem. Elem. de Botanique, tom. i. p. 244.—Haller. Hist. Stirp. Helv. 579.

† Gigault, in Journ. de Chimie Med. iv. p. 390.

‡ See Orfila's experiments, *Toxicol. gen.* ii. p. 261.

§ See *Buchanan's* Rerum Scoticarum Historiæ, lib. xx. *Edinburgi*, 1582.

Koestler † has recorded the symptoms which occurred in five persons of different ages, who ate more or less freely of the berries. They were a man and his two sons, the one nine, the other five years of age, and his two elder daughters. The youngest children ate the most, and in them the phenomena were more distinctly marked. They became restless and delirious, the wanderings only on lively subjects, and experienced loss of vision, extreme dilatation and insensibility of the pupils, spasmodic action of the muscles of the face, burning sensation in the œsophagus, spasms in the throat when they were made to swallow liquids, great excitement of the genitals, and involuntary passing of urine, bearing considerable resemblance to the symptoms of mania.

M. Gaultier de Claubry ‡ relates the cases of 150 soldiers, who were poisoned by the berries of Belladonna, which they gathered at Pirna, near Dresden. The peculiarity in these instances was the complete loss of voice; instead of speaking, they could only utter confused noises with a painful effort; the other symptoms were much resembling those before mentioned; with continual motion of the hands and fingers, and frequent bending forward of the trunk.

Mr. Brumwell § has described the cases of six soldiers who were poisoned in the same manner. In these the delirium was not particularly noticed till the morning after the berries were taken; two of the patients were delirious for three days. Plench || mentions several instances in which the delirium continued as long, and in which the blindness remained after the affection of the mind had disappeared. The dilated state of the pupils also frequently continues for some time, and it is asserted

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* This symptom exactly accords with the appearance observed by M. Gautier de Claubry in the 150 soldiers :—" *frequent bending forward of the trunk, and continual motion of the hands and fingers.*" Lib. cit.

† Medicinische Jahrbucher.

‡ Sedillot's Journ. Gen. de Med. Dec. 1813, p. 364.

§ London Med. Obs. and Inquiries. vi. p. 223.

|| Toxicologia, 109.

that tremors, disordered vision, giddiness, and various nervous affections have prevailed for three or four weeks *. In cases of death, the morbid appearances are swellings of the body, blood flowing from the nose, mouth, and ears, and the most rapid decomposition.

Some difference of opinion exists as to which is the most active part of the plant. The berries have been generally considered the most virulent; and both the pulp and the seeds appear to be possessed of poisonous qualities; as Gmelin † relates an instance in which the juice of the berries, mixed with wine, proved fatal; and we are informed, that the largest quantity of Atropia may be obtained from the seeds. The herbaceous part of the plant is usually employed medicinally, but it is probable, that the berries would furnish a more purely narcotic product. The root appears to be more active than the leaves. "From one to four grains of the dried powder of the root will occasion extraordinary dryness in the throat, giddiness, staggering, flushed face, dilated pupils, and sometimes even delirium. The extract from the leaves is also very energetic. It appears, however, to be a very uncertain preparation, unless when procured by evaporation *in vacuo,* for some samples from the Parisian shops have been found by Orfila to be quite inert." ‡

Treatment.—The remedies to be employed in cases of poisoning by this plant vary according to circumstances. The first thing to be administered is an emetic, such as a few grains of emetic tartar, sulphate of zinc or copper; tickling the throat with a feather, affusions of cold water upon the head, copious draughts of vinegar, or some vegetable acid, are very useful secondary means, especially as the torpidity of stomach induced by this poison is sometimes so great, that Haller has known fourteen grains of emetic tartar to be taken with scarcely any effect. If the stupor be very alarming, bleeding from the jugular vein is necessary; stimulants may be applied to the nose, and frictions over the region of the heart. If a considerable time has elapsed and inflammatory symptoms appear, emetics are improper, and vomiting should be excited by mechanical means only; after which, warm liquids, mucilaginous and acidulous drinks and saline purgatives should be administered, followed by mild tonics. "If M. Runge's experiments be correct, lime-water should be the antidote for poisoning by Belladonna." * Oxide of zinc has been found an effectual remedy in the case of an animal poisoned by this plant.

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* Magazin für die gessammte Heilkunde, xxi. 550.

† Geschichte des Pflanzengifte, p. 527.

‡ Christison, Treatise on Poisons, 3d ed. p. 761.

Medicinal Properties and Uses. — Notwithstanding the poisonous nature of the Belladonna, when duly modified in its use by the discretion of a skilful practitioner it is a most valuable and efficacious remedy. Like all other powerful remedial agents, it has been celebrated for a host of diseases, in many of which the propriety of using it is very questionable. The whole plant is possessed of the same virtues, apparently most powerful in the berries and the root, but more manageable in the leaves. The sensible effects produced by proper doses, are usually increase of perspiration, and of urine, and sometimes relaxation of the bowels. The leaves were first externally employed to discuss scirrhous and cancerous tumours, and to painful and ill-conditioned ulcers: for which purposes a decoction, or poultice made of them was applied, or when ulceration had taken place, the dried powder was sprinkled on the sore. Their good effects in this way led to their internal use for the same diseases, and numerous well-authenticated cases have sufficiently established their reputation†; but it must still be confessed, that in the hands of many distinguished members of the profession ‡ they have proved unsuccessful. From the influence which the Belladonna exerts over the nervous system, it has been proclaimed a powerful curative

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* Thomson's Dispensatory, 1836, p. 215.

† Juncker's Consp. Ther. gen. ed. 1725, p. 491.—Arnold Timmermann, Progr. de Bellad., *Rintel*, 1765.—Journ. de Med. ann. 1766.—Münch, in Hannov. Magaz. 1767, p. 1011, &c.—Mich. Albertus, De Belladonna.—T. Lambergen, Lect. inaug. sistens ephemeridem, &c.—Phil. Trans. vol. i.—Comment. de reb. in sc. nat. et med. gest. tom. viii. p. 654. — Durlac, Journ. de Med. tom. ii. p. 449.—Amoureux, loc. cit. tom. xiii. p. 47.—Marteau, loc. cit. tom. xiv. p. 108.—Zeigler, Beobacht, aus der Arzneywissenschaft.—Bergius, Mat. Med. vol. i. p. 128, &c., &c.

‡ Heister, Chirurgie, p. 328.—Van der Harr, over de Knierknoest—en Kanker Gezwellen, p. 85.—Van Doevern, in litt. ad Timmermann, Progr. cit. p. 28.—Timmermann, Chir. Händelser, ed. 2, p. 40.—De Haen, Rat. Med. tom. ii. p. 45, &c., &c.

means in hypochondriasis, melancholy, mania, and hydrophobia; but notwithstanding the cases mentioned by Mayerne, Richter, Münch, and others, later experience is not satisfactorily affirmative of its powers either in mania or hydrophobia. Its use in constitutional epilepsy, is commended by Greding, Evers, Theden, J. H. Münch, and Stoll; in hooping-cough by Marc; and in convulsive coughs by Buchhave; in jaundice also by Greding*; and in dropsy, rheumatism, gout, quartan fevers, and lues venerea, by various writers. To fevers in general it is not applicable, and dysentery appears the only inflammatory disease in which it has been successful†. Dupuytren, however, gave it internally in scrofulous ophthalmia and inflammation of the retina. Hahnemann and Koreff assert, that persons while under the influence of this medicine are safe from the contagion of scarlet fever, a fact which Randhahn has confirmed by experiments on one hundred and sixty children.

For all the complāints above mentioned, not only the leaves, but the berries and root, with their various preparations, have been employed according to the opinion of the prescriber.

The external use of the extract of Belladonna, rubbed on the eye-brow for the purpose of dilating the pupil prior to the operation of extraction of cataract, is now generally resorted to; its operation in this case, it would appear, is confined to the radiated fibres of the iris alone. Bougies armed with it have been applied to spasmodic strictures; and even to the neck and mouth of the womb, when their rigidity arrests parturition. A little of the extract rubbed on the affected part sometimes alleviates the pain of neuralgia; and a plaster composed of extract of Belladonna and carbonate of ammonia is very efficacious in relieving local pains.

From the uncertainty of the operation of the Deadly Nightshade, the dose of the powdered leaves should not exceed one grain at the beginning, and then be cautiously increased to five or six grains, according to the effects produced. If it be injudiciously or incautiously given; or when it is taken for a considerable time, it is apt to induce a dryness and stricture of the pharynx and adjoining parts of the œsophagus, sickness, vertigo, and dimness of sight, symptoms sufficiently indicative of the necessity of suspending its use for some time, and giving it in smaller doses when it is resumed*.

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* Greding, in Adversar. pract. vol. i. pars. iv. p. 637.—Evers, in Hannöv. Magaz. 1783, no. 99.—Theden, neue Bemerk. und Erfahr. vol. ii. p. 212.—J. H. Münch, Diss. Obs. circa usum Belladonnæ in melancholia, &c., p. 27, sqq.—Stoll, Rat. Med. vol. iii. p. 408.—Marc ex Flore Medicale, tom. ii. p. 11.—Buchhave, Anvüsning for Almuen til Belladonna rodens nyttige Brug i Kighoste, 1785.—Greding, in Ludwig Advers. vol. ii. pars 2. p. 319.

† Pinel, in Flore Medicale, l. c.

EXTRACTS OF DEADLY NIGHTSHADE†.

Take of fresh leaves of Deadly Nightshade......one pound.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and without straining, evaporate it to a convenient consistence. Dose, half a grain gradually increased to five grains.

INFUSION OF DEADLY NIGHTSHADE.

Take of dried leaves of Deadly Nightshade........ten grains;
Boiling water..........................one pint.

Macerate in a slightly covered vessel for an hour, and strain. Dose, from one to two ounces every six hours. Used chiefly as an injection in leucorrhœa, and cancer of the womb.

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* Thomson's Dispensatory, 8th edit. p. 215.

† Pharmacopœia Londinensis, 1836.

CXL.

QUERCUS ROBUR.

Common Oak.

Class XXI. Monœcia.—*Order* VI. Polyandria.

Nat. Ord. Amentaceæ.

Gen. Char. Male flowers in a lax catkin or spike:—*Perianth* five to seven-cleft. *Stamens* five to ten. Fertile flowers:—Involucre of several small scales united into a cup. *Perianth* single, incorporated with the germen, six-lobed. *Germen* three-celled; *style* one; *stigmas* two. *Nut* (acorn) one-celled, one-seeded, surrounded at the base by the enlarged cup-shaped involucre.

Spec. Char. Leaves oblong-obovate, sub-sessile, deeply sinuate, their sinuses rather acute, lobes obtuse. Fruit, oblong stalked.

SYNONYMES.

Greek	δρυς.
Latin.	Quercus cum longo pediculo. *Bauh. Pin.* 420. Quercus vulgaris. *Ger. Em.* 1339. Quercus latifolia. *Raii Syn.* 440. *Park. Theatr.* 1835. Quercus pedunculata. *Willd. Sp. Pl.* iv. p. 450. *Ehrh. Pl. Off.* 168. Quercus racemosa. *Lamarck Ency. Meth.* 1. p. 715. Quercus longæva. *Salisb. Prod.* 392. Quercus Robur. *Lin. Sp. Pl.* 1414. *Eng. Fl.* iv. p. 149. *Eug. Bot.* t. 1342.
French. ..	Chêne; Rouvre.
Italian. ..	Quercia; Querce.
Spanish and Port.	Roble.
German ..	Eiche.

Dutch	Eike; Eikeboom.
Danish....	Eeg.
Swedish...	Ek.
Polish	Dab.
Russ. and Bohemian	Dub.
Turkish. ..	Mesche.
Persian...	Pelut.
Arabic	Baalut.
Hind. and Sans.	Majup'hal.

Description.—Common Oak is a majestic, lofty tree, frequently attaining the height of ninety or one hundred feet, the roots penetrating far and deep, the trunk very thick, and when standing singly, sending off immense horizontal spreading branches, covered with a rough, dark brown bark. The leaves are alternate, on very short petioles, oblong-obovate, smooth, the margin sinuated, with irregular, obtuse, rounded lobes; the upper surface of a deep shining green, the lower paler, slightly glaucous, and marked with lateral and oblique nerves. The flowers are monœcious, in axillary lax catkins. The male flowers, disposed in a long drooping, cylindrical, peduncled catkin, have a membranous, sub-campanulate, generally five-cleft perianth (calyx), and usually ten stamens, with short filaments and globose two-lobed anthers. The female flowers, on single axillary peduncles, are few, small, usually sessile and scattered; each flower presents an involucre of several little scales, united into a cup, surmounting which is a perianth of six downy acute segments, closely investing the germen, which is ovate, crowned with a short conical style, supporting three or four obtuse reflexed stigmas. The fruit, called a nut, gland, or *acorn*, is seated in a coriaceous, thick, hemispherical cup or cupula,—the enlarged and indurated involucre; it is thrice the length of the cup, and when ripe drops out of it, ovoid, smooth, shining, straw-coloured, obtuse at the base, with a prominent hilum, and containing a single seed or kernel. Plate 37, fig. 1, (*a*) catkins of male flowers; (*b*) female flowers; (*c*) male flower magnified; (*d*) female flower magnified; (*e*) longitudinal section of the nut or acorn.

This tree is universally known as a native of Britain, growing in woods and hedge-rows. It occurs in Europe from the south of Spain to the middle of Sweden, and is also found in the north of Asia and of Africa. It flowers in April and May, and ripens its fruit in October.

The generic name is derived from the Celtic *quer*, *beautiful*; and *cuez*, *a tree*. The specific name is also derived from the Celtic term for the Oak, *rove;* whence the Latin *robur*, *strength*. The Greek δρυς, is probably derived from *derw*, another Celtic word for the tree, and hence the terms *Druids* and *Dryades*.

There are two species of Oak indigenous to Britain, the one above described and the sessile-fruited Oak (*Q. sessiliflora*), distinguished by the long petioles of the leaves, and the fruit clustered upon a very short stalk or quite sessile. The timber of the latter is generally considered to be very inferior to that of Quercus Robur (*Q. pedunculata* of Willdenow, and various other writers); but the correctness of this opinion has been recently called in question. Of the foreign species there are nearly a hundred and fifty, more than half of which are natives of America. The live Oak (*Q. virens*) is one of the most valuable timber trees of America. The black Oak (*Q. tinctoria*) is also much prized both for its wood and bark. The dyer's Oak (*Q. infectoria*) affords the gall-nuts of commerce, which are produced by the puncture of an insect, the *Diplolepis gallæ tinctoriæ*. The bark of *Quercus suber*, is the well-known substance *cork*. The holly or Holm Oak (*Q. ilex*) is a handsome evergreen-tree, the timber of which is highly esteemed. The galls of *Q. coccifera* afford the dye called *kermes*.

The praises of the Oak have been celebrated by poets, philosophers, novelists, agriculturalists, political economists, and by all who can appreciate what is beautiful or useful in nature. It is one of the most enduring of trees, and the very emblem of strength and perpetuity, and by general consent the forest-king. Indeed its majesty rendered it an object of veneration in former ages. The Oaks of the forest of Dodona, near which was the celebrated temple of Jupiter, were even consulted as oracles; the Druids performed their mystic rites under the shade of these sacred trees, and they have often formed temples for idolatrous worship. Among the Greeks and Romans, a chaplet of Oak was one of the highest honours that could be conferred on a citizen.

Gilpin observes, that there are " a few venerable Oaks in the New Forest, that chronicle upon their furrowed trunks ages before the Conquest." An Oak, figured in Evelyn's Sylva, was felled at Withy Park, Shropshire, in 1697, which was nine feet in diameter, contained twenty-eight tons of timber in the body alone, and the spread of the top from bough to bough, was one hundred and forty-four feet. The Greendale Oak, in Welbeck Park, measures thirty-five feet in circumference, near the base, and is supposed to be full seven hundred years old. Dr. Plott mentions an Oak at Norbury, the girth of which was forty-five feet; and another at Keicot, under the shade of which 3474 men could stand.

The Fairlop Oak in Hainault forest, Essex, was an immense tree, with branches overspreading an area of three hundred feet. It is now destroyed, but a fair is still held on the spot where it formerly stood. One of the largest Oaks of which there is any record, was in Dorsetshire. Its circumference was sixty-eight feet, and the cavity which was sixteen feet long, and twenty feet high, was about the time of the Commonwealth used by an old man for the entertainment of travellers. In Ampthill Park, Beds., there is a fine specimen measuring forty feet in circumference at the base, and is supposed to be one thousand years old. Dryden assigns nine centuries to the Oak :—

" The monarch oak, the patriarch of the trees,
Shoots rising up and spreads by slow degrees;
Three centuries he grows, and three he stays
Supreme in state, and in three more decays."

Virgil's lines have been often paraphrased,

——— " Quantùm vertice ad auras
Æthereas, tantum radice in Tartara tendit."
Æn. iv. v. 445.

" In Britain, although it is unknown that acorns ever formed the common food * of the inhabitants, it was for them alone that the oak was prized, as furnishing the chief support of the large herds of swine on which our forefathers fed. Woods of old were valued according to the number of hogs they could fatten, and so rigidly were the forest lands surveyed, that in ancient records, such as the Doomsday books, woods are mentioned 'of a single hog.' The right of feeding swine in the woods, called *Panage*, formed, some centuries ago, one of the most valuable kinds of property. With this right monasteries were endowed, and it often constituted the dowry of the daughters of the Saxon kings. Indeed the encroachments of the Norman princes on this common right, in their passion for preserving forests for the chace, was one of the most grievous wrongs of which the oppressed people in those times complained, and relief from which was wrung from John, among other privileges, on the plains of Runnymede."

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* The Oaks which bear edible acorns are the Evergreen Oak (*Q. Ilex*), celebrated by Virgil; *Q. Ballota* and *Esculus*, natives of Barbary and Spain; *Q. castanea*, found on the banks of the Delaware; and several others.

General Uses.—The Oak is of immense importance as a timber tree, from its furnishing the materials for the "wooden walls of Old England!" It has been computed that each 74 gun ship requires 2000 tons, which are obtained from as many trees, the full produce of fifty acres. The wood being very hard, tough, and not liable to splinter, is also valued for the manufacture of staves, laths, and spokes of wheels, also for mills, presses, wine-casks, and for all purposes where strength, solidity and durability, are required. Oak saw-dust is one of the principal materials used in dyeing fustian; it affords by proper management all the various shades of brown and drab. The bark is well known for its use in tanning leather, and when it has fulfilled the purposes of the tanner, it is burned as fuel, and is employed by the gardener to produce heat by fermentation. An infusion of the bark with a small quantity of copperas, is used by the common people to dye woollen of a purplish hue, which is sufficiently durable. The leaves are eaten by horses, cows, goats and sheep, and though inferior to the bark, have been used in tanning. It has been asserted that a peck of Oak leaves is equal to a pound of bark. The acorns form a common article of food for swine and deer. We have already adverted to the opinion, that our ancestors derived their sustenance from the fruit of this tree; it might have been resorted to in times of scarcity, but it is too bitter and austere to be used as food, especially by savage nations who were acquainted with no means for obviating these qualities, and what is said by ancient authors of the edible nature of the acorn must be referred to some other species. The French, during the great dearth which prevailed in 1709, were driven to the extremity of eating it as bread, and experienced very injurious effects, such as obstinate constipation and destructive cholera. In Norway and Smoland, however, the acorns, after being deprived in some measure of their astringency and bitterness, are mixed with half their quantity of wheaten flour, and made into wholesome bread. Their way of preparing is:—after selecting the ripe fruit only, they boil it in water, that the integuments or skin may be separated, and then dry the kernel and reduce it to powder; it then undergoes protracted fermentation in a powerful heat, and is thoroughly kneaded [*]. Parmentier [†] states, that by pressure alone the acorn is deprived of its bitter and astringent juice, and when dried and reduced to a fine powder, is pleasant and nutritious. In this state it has been used as a substitute for coffee [‡]. It is probable that if acorns were allowed to germinate, and their growth suddenly stopped by means of heat, as in the process of malting, and then deprived of their remaining bitterness and astringency by maceration in water, or some other method, they would afford a nutritious food. When suffered to germinate a chemical change is produced, and they yield by distillation an ardent spirit.

The galls or excrescences called *oak-apples*, produced on the young branches of the Oak by the puncture of an insect, a species of *Cynips*, are used as a substitute for galls [§], in dyeing black colours, with the addition of copperas, and the shades are more beautiful than those produced by galls, but not near so durable; their juice mixed with copperas and gum arabic makes a good black ink.

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[*] Murray, App. Med. vol. i. p. 98.

[†] Mem. sur les vegetaux qui pourroient suppléer en tems de disette.

[‡] Murray, *l. c.*

[§] The true gall-nuts are the product of the Quercus infectoria, a native of the East. They are excrescences of a similar nature to the common oak-apple, but effected by a different insect, the *diplolepis*. The origin of galls was very puzzling to the ancient philosophers. Matthiolus ascribes their origin to spontaneous generation, and as Gerard tells us, "The oke-apples being broken asunder do foreshew the sequell of the yeare, as the expert Kentish husbandmen have obserued by the liuing things found in them: as if they found an ant, they foretell plenty of graine to ensue; if a white worm or magot, murren of beasts and cattell; if a spider, then, say they, we shall have a pestilence or some such like sickness amongst men: These things the learned also have observed and noted; for Matthiolus, writing upon Dioscorides saith," &c.—*Ger. Em.* p. 1341.

QUALITIES.—The bark is inodorous, with a rough, astringent taste. It yields its virtues both to water and alcohol. The aqueous infusion has a yellowish colour, and a weak styptic taste; the decoction has a brown colour, and the austere taste of the bark. "It reddens tincture of litmus, and is precipitated by solutions of isinglass, infusion of yellow cinchona bark, the carbonates of the alkalies, the aromatic spirits of ammonia, lime-water, solutions of sulphate of iron, acetate of lead, and bichloride of mercury."* Hence it contains gallic acid, extractive and tannin, the latter in considerable quantity. Sir H. Davy found that an ounce of the inner cortical part of young oak bark afforded by lixiviation 111 grains of solid matter, of which seventy-seven were tannin; and the cellular integument or middle coloured part yielded only forty-three grains of solid matter, of which nineteen were tannin; and the epidermis furnished scarcely any tannin or extractive †.

MEDICINAL PROPERTIES AND USES.—Every part of this tree possesses a considerable degree of astringency; but this property is most abundant in the bark. Dioscorides and Galen, with other ancient physicians, were fully aware of the qualities of the Oak, and by them it was not infrequently prescribed in dysentery, spitting of blood, and uterine hæmorrhages, and from Matthiolus, Lonicerus, and Horstius, we learn that it has also been commended in fluor albus, gonorrhœa, tooth-ache, and calculus ‡. Ledel found the bark boiled in beer useful in diarrhœa §; and Darel || also gave the bark of the young branches infused in wine for the same complaints. Like other astringents, it has been used in intermittents ¶, and some have supposed

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* Thomson's Dispensatory, 1836, p. 886.

† Hence, for medical purposes the bark should be selected from the smaller branches of the Oak, when the epidermis is still thin. The quantity of tannin also varies considerably, according to the season of the year at which the trees are barked; thus the bark cut in spring contains, according to Biggin, (Philos. Transactions, 1799,) four times more of the astringent principle than that which is obtained in winter.

‡ Murray, App. Med. tom. i. p. 94.

§ Ledel, Eph. N. Cur. Dec. 3. A. i. p. 88.

|| Darel, Ap. p. 45.

¶ Scopoli, Flor. Carn. p. 414.

CXLI.

ALLIUM CEPA.

Common Onion.

Class VI. Hexandria.—*Order* I. Monogynia.

Nat. Ord. Liliaceæ.

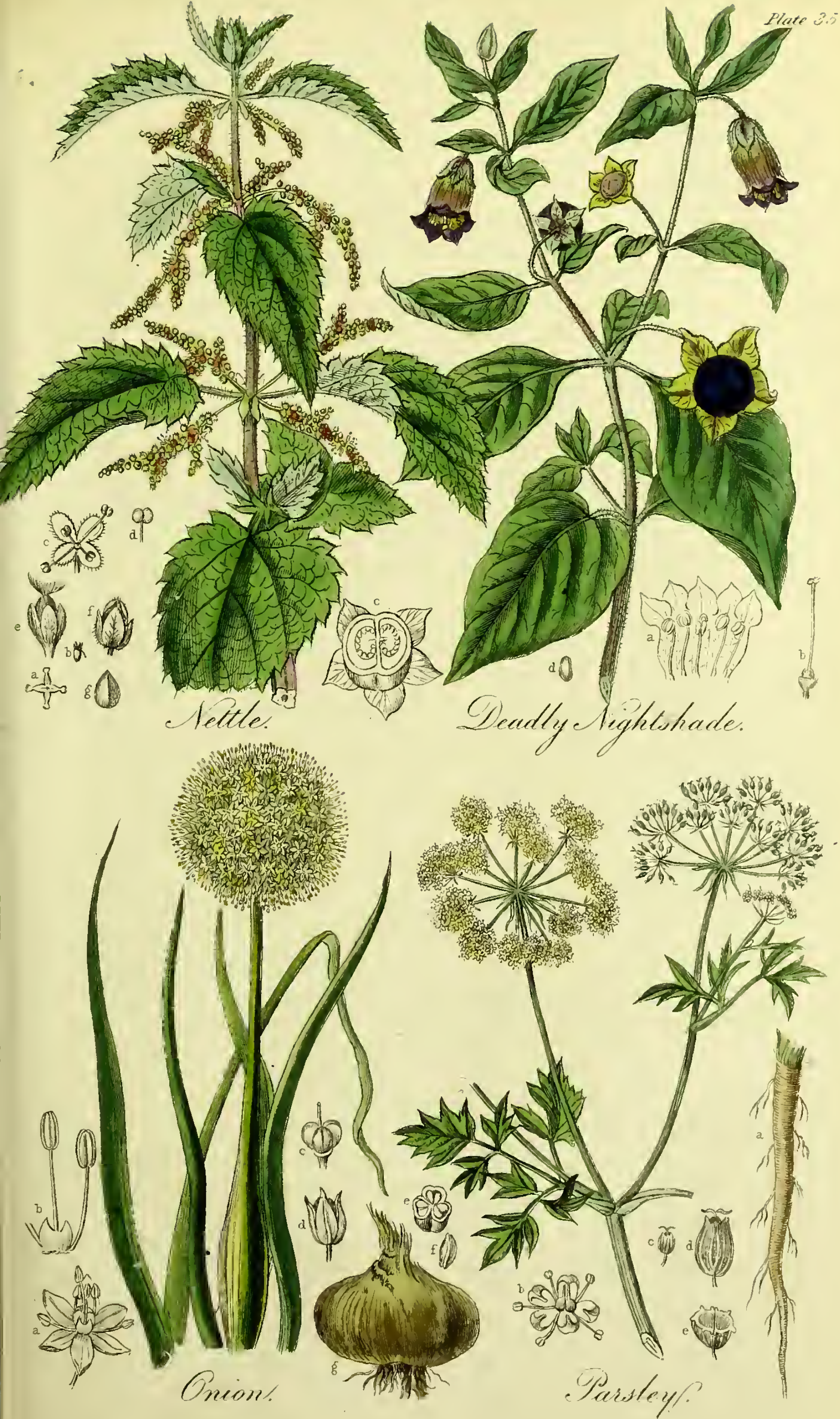
Gen. Char. See Garlic (*Allium sativum*).

Spec. Char. Scape ventricose beneath, longer than the fistulous round leaves.

SYNONYMES.

Greek	*κρομμυον. Dioscorides.*
Latin.	Cepa vulgaris. *Bauh. Pin.* 71. *Raii Hist.* 1116.
	Cepa alba. *Ger. Em.* 169.
	Cepa. *Fuchs.* 421. c. 164. *Lob. obs.* 74.
	Allium esculentum. *Salisb. Prod.* 255.
	Allium Cepa. *Lin. Sp. Pl.* 431.
French. ..	Ognon ; Ciboule.
Italian	Cipolla.
Spanish. ..	Cebolla.
Portuguese.	Cebola.
German. ..	Zwiebel ; Zizollen.
Dutch	Uijen.
Danish	Lögen.
Swedish. ..	Rödlök.
Polish	Cebula.
Russ	Luck.
Turkish. ..	Sochan.
Persian. ..	Pias.
Arabic	Bussul.
Hebrew. ...	Bhazal.
Hindoost ..	Piaj.
Javanese ..	Brangbang.
Chinese ...	Tsum xi.

Plate 35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Nettle.

Deadly Nightshade.

Onion.

Parsley.

Description. — The root consists of several tufted, simple, whitish fibres, attached to the base of a fleshy plate or disk, upon which is situated the bulb, (subterranean bud or stem,) consisting of numerous, more or less thick fleshy tunics, one within another, forming an orbicular or ovate depressed body. The leaves are glabrous, cylindrical, fistulous, acuminate, and all proceed from the root. The flowers are terminal, umbellate, in a rounded or oval head, supported on a round fistulous scape, from two to three feet in height, ventricose or inflated towards its lower part. The perianth resembles a corolla, consisting of six spreading, ovate, acute petals, of a whitish or reddish hue, with a green costa, the three inner rather larger. The stamens are six, with whitish filaments, united at the base; the three opposite to the outer petals subulate, erect; the three opposite to the inner petals subulate and spreading above, broadly ovate at the base, often with a short tooth on each side; the anthers ovate, opening inwards. The germen is roundish, slightly depressed, obsoletely trigonous, with a short style, and an acute stigma. The fruit is a three-sided, triangular capsule, three-celled, three-valved, each cell containing two or three roundish, oblique, angular, blackish seeds. Plate 35, fig. 3, (*a*) entire flower, magnified; (*b*) one of the three enlarged stamens; (*c*) pistil; (*d*) fruit; (*e*) transverse section of the fruit; (*f*) seed magnified.

The Onion is a well known plant, and extensively cultivated all over Europe for culinary purposes. Like some other common vegetables, its native country is not exactly known. It flowers in June and July.

The origin of the generic name has been already suggested. Cepa (cæpe, *Latin*,) is derived from the Celtic *cep*, signifying a head; hence also the Latin *caput*, &c.

There is a variety called the Tree-Onion, (*Allium Cepa ramosum*,) which produces its bulbs among the flowers at the ends of the branched scape, and sometimes bears only bulbs. The Spanish Onion is also a variety, but when cultivated in this country it grows less, and becomes more acrid every year, degenerating into the Common Onion. In warm climates, the Onion contains much more saccharine matter, and in Egypt, it is consumed in amazing quantities, and is much esteemed as a delicious food. Hasselquist conjectures that it is the vegetable for which the Israelites longed when in the wilderness. He says, "whoever has tasted Onions in Egypt will allow that none can be had better in any part of the world. Here they are sweet, in other countries they are nauseous and strong; here they are soft, whereas in the northern and other parts they are hard, and their coats so compact that they are difficult of digestion." We have already mentioned, that the ancient Egyptians swore by the garlic and onions in their gardens. Lucian observes, "the inhabitants of Pelusium adore the Onion."

QUALITIES AND GENERAL USES.—The use of the Onion as a pot-herb, salad, and pickle, is extremely common. In its crude state it is not adapted for bilious temperaments, delicate or very irritable persons, or for those who are subject to hæmorrhages, cutaneous affections, &c. When eaten too freely it is reported to produce flatulence, headache, thirst and turbulent dreams. After undergoing the process of boiling it is much more salubrious, and in this state it is very frequently employed, but much more abundantly on the continent than with us.

The odour and taste are very analogous to garlic, but are much less powerful. Its volatile particles produce a pungent sensation in the nose, and irritate the eyes, causing a flow of tears *. In distillation, the whole of its acrimony and peculiar flavour arise with the water, which affords a small quantity of acrid volatile oil combined with sulphur †. The expressed juice is very odorous, and reddens on exposure to the air; it contains sugar, or rather *mannite*, mucus, phosphoric acid, phosphate of lime, and citrate of lime. Coction destroys in great measure the acrimony and exciting quality of the bulb, and renders it emollient, dulcescent, and relaxing.

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* Hence Lucilius calls it "*flebile cæpe.*" And Shakspeare, adverting to this property, says—

> "If the boy have not a woman's gift,
> To rain a shower of commanded tears,
> An onion will do well."

† "It is this sulphuretted oil which blackens silver plate, and which occasions the disagreeable odour of the bulb in putrifying."

Medicinal Properties and Uses.—The Onion, reduced to the state of pulp by boiling, and exhibited either in substance or decoction, is serviceable in many diseases of local or general irritation, such as catarrh of the lungs, urethra, and bladder. It is most frequently used as an aqueous decoction with sugar, honey, or milk, and in this form may be given in obstinate coughs, asthma, phthisis, and other pulmonary complaints. Externally, cataplasms of the boiled bulb, or the bulbs roasted and split, are applied to inflammatory tumours, boils, &c., to diminish painful tension and to promote suppuration. When crude, the Onion has no longer the same emollient and demulcent effects; on the contrary, when applied to the skin it produces redness and inflammation, and taken internally its acrid stimulating quality is manifested in the mouth by pungency, in the stomach by a sense of heat, and on the digestive organs generally by irritation more or less marked; in this way it increases the appetite, excites urine, cutaneous transpiration, and pulmonary exhalation, and appears in some instances to favour the efflux of the menses. From experiments* it has been considered lithontriptic, although but little confidence is now granted to it; nevertheless, as a diuretic it is unquestionably useful in relieving retention of urine and dropsy. Lanzoni † saw a case of ascites disappear in a subject who used it for a month, both in substance and decoction, and Murray ‡ relates a case of anasarca which was cured by the simple application of the raw pulp to the hypogastric region, and to the soles of the feet. Taken abundantly against scurvy, it acts in the twofold character of nutrient and stimulant, and forms a medicinal aliment in affections of the kind §. The expressed juice dropped into the ear, or applied upon cotton, is recommended for deafness, and a small bulb roasted and applied as hot as can be borne, is often beneficial in earache. The juice is also applied to burns, chilblains, and the bites or stings of insects. In fine, Onion has all the properties of garlic in a smaller degree.

* Lobb, Exper. 96—102.

† Lanzoni, Oper. tom. ii. p. 501. Obs. 207.

‡ Murray, Appar. Med. tom. v. p. 138.

§ See Lind on Scurvy, p. 182—88.

CXLII.

ORCHIS MASCULA.

Early Purple Orchis.

Class XX. GYNANDRIA.—*Order* I. MONANDRIA.

Nat. Ord. ORCHIDEÆ.

GEN. CHAR. *Flowers* ringent. *Lip* spurred. *Glands* of the stalks of the *pollen-masses* contained in a common little pouch.

SPEC. CHAR. Lip three-lobed, crenulate, the middle lobe emarginate. Two lateral sepals ascending, reflexed. Spur obtuse, rather longer than the germen.

SYNONYMES.

Greek	ορχις. *Dioscorides.*
Latin	Orchis Morio mas foliis maculatis. *Bauh. Pin.* 81. *Raii Syn.* 376. *Park. Theatr.* 1346. Cynosorchis morio mas, et maculata. *Ger. Em.* 206—8. Testiculus morionis mas. *Dod. Pempt.* 236. Orchis mascula. *Lin. Sp. Pl.* 1333. *Eng. Fl.* iv. p. 11. *Eng. Bot.* t. 631.
French....	Orchis; Orchis male; Testicule de Prêtre.
Italian....	Orchide; Satirione.
Spanish ..	Orchis; Satyrion macho.
German ..	Maennliches knabenkraut.
Dutch	Kulletjes-kruid; Mannetjes-harlekyn.

DESCRIPTION.—The root consists of two ovate entire tubers, of a pale brown colour, surmounted by numerous simple, elongated, fleshy, spreading fibres. The stem is erect, simple, cylindrical, fleshy, tinged with purple at the summit, and from nine to sixteen inches in height. The leaves are chiefly radical, alternate, obovate-lanceolate or elliptical, plane, or somewhat concave, generally marked with dark purple irregular spots, paler beneath, with numerous slender parallel veins, and a prominent midrib; the upper and smaller leaves sheathing at the base. The flowers are disposed in a large terminal, lax, oblong spike; they are of a rich roseate-purple colour, sometimes white, with a coloured twisted bractea at the base of each. The calyx consists of three leaves or sepals, the middle one ascending, bending forwards, the lateral ones erect, acute, reflexed back to back, marked with purple veins. The corolla is composed of three petals, the two upper vaulted, the lower or lip (sometimes called *nectary*) large, three-lobed, and terminating behind in a horizontal, obtuse spur, about as long as the germen; the centre of the base of the lip is greenish white, spotted; the lateral lobes somewhat recurved, the middle one smaller, longer, emarginate. The stamen consists of an anther of two oblong cells, fixed to the top of the column immediately above the stigma, each cell containing an obovate stalked mass of pollen, composed of grains which cohere elastically, having a gland at the base of the stalk. The germen is inferior, oblong, furrowed, spirally twisted, purplish externally; the style is concreted into a mass or column with the filaments of the stamens; the stigma is a depressed viscid space around an orifice which leads to the germen. The capsule is smooth, shining, oblong, one-celled, three-valved, containing numerous seeds attached to the sides of the valves. Plate 37, fig. 2; (*a*) entire flower magnified, viewed sidewise; (*b*) column, showing the pollen-masses, &c., magnified; (*c*) pollen-mass isolated, magnified.

This species of Orchis is frequent in meadows, pastures, and woods in this country, flowering from the end of April to the middle of June.

Various species of Orchis are mentioned by Dioscorides *, and others of the ancients. The term Orchis is derived from the Greek ορχις, *testiculus*, in allusion to the form of the tuber. Pliny † mentions the *orchis* and the *cynosorchis*, which evidently refer to the plants of this curious genus. In Arabic it is called *Sahleb*, whence the English word *salep* is obtained. Gerard calls the species here described *Male fool-stones.*

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* Mat. Med. lib. iii. cap. 141 et 142.

† "Orchis herba sive serapias, foliis porri, caule palmeo; flore purpureo, gemina radice Testiculis simili."—*Hist.* lib. xxvi. c. 10.

Of this beautiful and curious genus, several species are indigenous to Britain. The green-winged meadow Orchis (*O. Morio*) somewhat resembles the *O. mascula*, but has the following distinctive characters, "calyx ribbed with green, forming a sort of helmet over the rest of the flower; spur ascending, blunt, rather shorter than the germen." It is from eight to twelve inches in height, and is frequent in meadows and pastures, flowering in May and June, rather later than the *O. mascula.* The spotted palmate Orchis (*O. maculata*), the Marsh Orchis (*O. latifolia*), and the dwarf dark-winged Orchis (*O. ustulata*) are also common. The butterfly Orchis (*Habenaria* or *Platanthera bifolia*), is not unfrequent in moist copses and pastures in June, and is celebrated for the delicious fragrance of its flowers. The genera *Aceras*, *Gymnadenia*, *Listera*, and *Ophrys*, whose flowers simulate the forms of various insects, are also well deserving of attention.

The structure of the flowers of Orchideous plants is, perhaps, as curious and interesting as any that the vegetable world affords. The perianth consists of six pieces, mostly petaloid, in two series; of which the three outer may be called the calyx, the three inner the corolla; the upper petal, which by the twisting of the germen becomes the lower, is differently shaped and mostly larger than the rest, and is called the lip, usually terminating behind, at the base, in a hollow appendage or spur. The stamens may be considered as three, of which the two lateral ones are abortive, and united with the style, form a fleshy column, which at the summit bears the two-celled anther, and surmounts the germen or ovary; hence these plants have been termed *gynandrous* by Linnæus, and *epigynous* by Jussieu. The stigma is a viscid space in front of the column, and is usually situated immediately below the anther. The structure and economy of the root is also interesting. "An Orchis being taken out of the ground is found with two solid masses, ovate or fasciculated, at the base of the stem, above which proceed the thick fleshy fibres which nourish the plant. One of these masses or tubers is destined to be the successor of the other, and is plump and vigorous, while the other or decaying one is always wrinkled and withered. From this withered one has proceeded the existing stem, and the plump one is an offset, from the centre of which the stem of the succeeding year is destined to proceed. By this means the actual situation of the plant is changed about half an inch every year, and as the offset is always produced from the side opposite to the withered bulb, the plant travels always in one direction, and will in a dozen years have marched six inches from the place where it formerly stood." *

QUALITIES AND GENERAL USES.—The tubers of this plant form the best substitute for the celebrated Persian *Salep*, with which it has been long considered identical, but according to Royle, the true eastern plant is a species of *Eulophia*. This species however, affords a product equally nutritious with the foreign Salep †, as does the *O. Morio*, and probably the whole of the tuberous-rooted species of Orchis. The proper time for taking up the tubers is (about August or September) when the seeds are perfected and the stems are beginning to wither; at this period the new tuber is plump and firm; this alone is selected and the withered one thrown away. It is washed in water, the cuticle rubbed off with a coarse cloth and then placed on a tin plate in an oven previously heated to the degree requisite for baking bread. In eight or ten minutes it acquires the transparency of horn, and is scarcely diminished in size; it is then placed in a dry room for two or three days, or exposed to a moderate heat for a few hours; after which it is ground into powder and is fit for use.

The sensible qualities of the plant are rather feeble. The odour of the flowers is moderately strong, and to most persons unpleasant, and has even been designated *hircine* ‡; and the taste is bitterish and nauseous. The fresh tuber has a faint, somewhat unpleasant smell, and a viscid, sweetish taste[*]. "The entire tubers digested in water render the fluid gelatinous on the surface and smooth to the touch, but cannot be made to deliquesce into a mucilage even by boiling. In order to obtain a jelly, it is necessary that the tubers be previously well pulverized, then mixed with tepid water and boiled, the liquid being kept constantly stirring with a spatula or spoon; a jelly is thus obtained which is transparent, very soft, equal, insipid, inodorous, and very glutinous. If the liquid be not stirred, no jelly is formed, but the powder subsides and remains at the bottom, in a swollen, somewhat gelatinous state, and, although boiled, will not mix with the water. One drachm of the powder is sufficient to gelatinize eight ounces of water. It also forms a jelly with vinegar, but is not soluble in alcohol and the expressed oils."[†] The powder appears to consist of starch and mucilage, or *Bassorin*. As an article of food it is very nutritious, and contains more farinaceous matter in a small bulk than almost any vegetable. Hence it is very useful for travellers and voyagers, especially as it does not require long boiling nor much water, and, according to Percival[‡], may be made with sea-water, the saltness of which it overcomes by the mucilage it contains. Lind[§] states that the powdered root, combined with dried animal jelly, affords an excellent food for travellers. An ounce of each of these substances, dissolved in four pints of water, affords sustenance sufficient for a man during twenty-four hours; and three pounds of each will support a person for a month.

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* Loudon's Encyclop. of Plants, p. 752.

† Salep, as met with in commerce, occurs in the form of ovate or ovate-oblong bodies, usually strung on threads, smooth, semi-transparent, hard and somewhat horny; soluble when masticated, and when pounded affording a white powder. It is held in much esteem by the Persians and Turks, for recruiting the exhausted strength of enervated or aged persons, and is especially prized as an aphrodisiac; stimulating substances are, however, often combined with it, such as amber, musk, ginger, cloves, cinnamon, &c. It has been, and still is we believe, used by the hard working classes of this city, as a breakfast drink instead of tea or coffee, than which it is certainly more nutritious.

‡ The flowers of *O. Morio* have rather a fragrant odour.

MEDICINAL PROPERTIES AND USES.—The tubers of Orchis have enjoyed much reputation in former times for their aphrodisiac and restorative powers, and many absurd statements of their effects are recorded by the ancient authors. The Salep of the East is still regarded in the same light, but it can only exert this property in consequence of its eminently nutritive qualities, in which it resembles shell-fish, milk, eggs, and animal food in general. Much also has been written of its efficacy in gout, epilepsy, and palpitation of the heart, which we shall pass over in silence, as being quite imaginary. From its demulcent, mucilaginous, emollient, and incrassating properties, it is nevertheless useful in various diseases. In dysentery [*] it has been much praised, also in diarrhœa [†], bilious colic [‡], hectic and nervous fevers, tenesmus, nephritis, calculous affections, strangury, and other diseases of the urinary passages. In pulmonary phthisis it has been recommended for supporting the vital forces and retarding the progress of colliquation and marasmus. In sea-scurvy it obtends the acrimony of the fluids, and is easily assimilated into a bland and nutritious chyle [§]. "In the symptomatic fever which arises from the absorption of pus, from ulcers in the lungs, from wounds, or from amputation, it is an admirable demulcent, and well adapted to resist that *crasis* of the blood which is so evident in these cases." [||]

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[*] The inference deduced from the odour and form of the tubers, as to their reputed effects upon the animal system, must have appeared to the believers in the doctrine of signatures very confirmatory of the truth of their hypotheses. From the odour of the root, Murray (App. Med. vol. v. p. 287) inclines to think that there may be some foundation for its restorative, independent of its nutritive qualities.

[†] Bergius, Mat. Med. tom. ii. p. 712.

[‡] Essays, Med. and Experimental, vol. ii. p. 37.

[§] Essay on Diseases of Hot Climates, Append. p. 338.

We have already described the method of preparing Salep. When thoroughly pulverized, it may be given in solution in water, milk, broth, &c., in the dose of a drachm to a pint and a half of fluid, which may be sweetened with sugar or rendered aromatic with orange-flower water, or acidulated with barberries, &c. One drachm of salep, dissolved in a quarter of a pint of hot water, constitutes a jelly, of which a spoonful may be given every two hours. It may also be associated with oil of almonds to form a linctus, and may be made into lozenges with sugar and mucilage.

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[*] Degner, Hist. dysent. biblioso-contag. p. 170.

[†] Lund. in Vet. Acad. Handl. p. 315.

[‡] Ibid. p. 317.

[§] Fritze, Med. Annalen, vol. i. p. 111.

[||] Percival's Essays, Med. and Experimental, vol. ii. p. 48.

[¶] Ibid., *l. c.*

CXLIII.

PETROSELINUM SATIVUM.

Common Parsley.

Class V. Pentandria.—*Order* II. Digynia.

Nat. Ord. Umbelliferæ.

Gen. Char. *Calyx* obsolete. *Petals* roundish, incurved, entire, scarcely emarginate, with an inflexed point. *Fruit* ovate, contracted laterally, sub-didymous. *Carpels* with 5 filiform equal ridges, of which the lateral ones are marginal. *Channels* with single vittæ. *Seed* gibbous, convex, nearly plane in front.—General involucre of *few*; partial of *many leaves*.

Spec. Char. Leaves decompound, shining; lower leaflets ovate-cuneate, trifid, toothed; upper lanceolate nearly entire. Leaves of involucel filiform.

SYNONYMES.

Greek	πετροσελινον.
Latin	Apium hortense, Petroselinum vulgo. *Bauh. Pin.* 153.
	Apium hortense. *Ger. Em.* 1013. *Raii Hist.* 448.
	Petroselinum vulgare. *Park. Theatr.* 923.
	Apium Petroselinum. *Lin. Sp. Pl.* 379.
	Apium vulgare. *Lam. Fl. Fr.* iii. p. 1027.
	Petroselinum sativum. *Hoffm. Umb.* i. p. 78. *Koch. Umb.* p. 127.
French	Persil; Persil ordinaire.
Italian	Petrosemolo; Prezzemolo.
Spanish	Perexil.
Port.	Perekil; Apio.
German	Petersilie; Garteneppich.
Dutch	Peterselie.
Danish	Persille.
Swedish	Persilia.
Polish	Pietruske.
Bohemian	Petrzel.
Russ.	Petruschka.
Armenian	Niachur.
Egypt	Baqdunis.

Description.—The root is biennial, long, fusiform, whitish, and beset with fibres. The stem is erect, round, striated, furrowed, branched, and rises about two feet in height. The leaves are petiolate, decompound, of a deep, shining green colour; the lower composed of ovate-cuneate, trifid and toothed pinnæ; the upper leaves sheathing at the base, with the leaflets much less divided, the uppermost lanceolate or linear, entire. The flowers are small, yellowish, and disposed in axillary and terminal umbels of many rays, usually with an involucre of one leaf at the base of the general umbel, and with six or eight small subulate leaves at the base of the partial umbels. The calyx is an obsolete margin. The corolla consists of five nearly equal ovate petals with an inflexed point. The filaments are five, spreading, slender, longer than the corolla, and tipped with roundish anthers. The germen is ovate, striated, supporting two short, diverging styles, terminated by obtuse stigmas. The fruit is greenish or ash-coloured, ovate, compressed laterally, somewhat didymous, separable into two carpels or mericarps. (See Gen. Char.) Plate 35, fig. 4; (*a*) root; (*b*) flower magnified; (*c*) fruit, natural size; (*d*) the same magnified; (*e*) transverse section of the same.

Common Parsley is a native of Sardinia, whence it was introduced to England in 1548; also of Greece, Turkey, and the Archipelago, and is so commonly cultivated in gardens as to be naturalized in several places, though not included in the British Flora. It flowers in June and July.

The generic name is derived from the Greek πετροσελινον, compounded of πετρος, *a rock*, and σελινον, *parsley*, alluding to the habitat. The Romans called this plant *apium*, a name which some etymologists derive from *apex*, because the head of victors was crowned with it, and others from *apis*, because bees are fond of it.

Parsley was formerly included with celery in the genus *Apium;* modern botanists, however, are almost universally agreed upon making it a new genus, differing principally in the petals being contracted into an oblong segment, in the ovate and sub-didymous fruit, and the presence of involucres. The only British species is the Corn Parsley, (*P. segetum*, Koch.; *Sison segetum*, Lin.,) having pinnate, radical leaves, the leaflets lobed, cut, and serrated; upper leaves with linear, imperfect leaflets, and the rays of the umbels few and unequal. This plant grows in moist fields, in a calcareous soil, in the middle and south of England. In Gerard's Herbal we have a very elaborate description of it by Mr. John Goodyer, and an account of the origin of the name *Honewort*, from its being used to cure a swelling in the cheek called a *hone*.

Parsley was held in great esteem by the ancient Greeks, as it constituted the victor's crown at the Nemean and Isthmian games; it was also used at funerals, and was strewed upon the tombs* of the departed. The garlands bestowed upon the conquerors at the games instituted in honour of the illustrious dead were usually of parsley, as it was thought to have some peculiar relation to the dead, being fabled to have sprung from the blood of Archemorus. Virgil and Horace speak of its employment as a coronary herb :—

> "Floribus atque apio crines ornatus amaro."
> *Virg. Ecl.* VI. *v.* 68.

> "Nec desint epulis rosæ,
> Neu vivax apium, neu breve lilium."
> *Hor. Carm.* lib. I. Ode 36.

> "Quis udo
> Deproperare apio coronas,
> Curatve myrto? Quem Venus arbitrum
> Dicet bibendi?"
> *Ibid. Carm.* lib. II. Ode 7.

From its being thus introduced at the banquets of the ancients, some commentators have supposed that it was esteemed preventive of intoxication, like the Ivy.

When speaking of the Fool's-Parsley, we mentioned that it had sometimes been mistaken for the Garden Parsley; the danger may be obviated by cultivating only the curled leaved variety of the latter (*P. sativum crispum*). Another variety is the broad-leaved, (*P. sativum latifolium*,) cultivated for the sake of its large edible roots.

Qualities and general Uses.—The use of Parsley as a culinary vegetable is familiar to every one. Sheep are very fond of it, and it is said not only to render their flesh more delicious, but to preserve them from the rot; it is however a deadly poison to parrots and some other birds. It may appear somewhat credulous to attribute to this plant any deleterious property upon the human subject, but on the authority of several authors* it has produced or aggravated epilepsy in various individuals, and has proved injurious to the eyes. Alston, whose judgment and veracity cannot be questioned, says, "I have observed, after eating plentifully of raw Parsley, a fulness of the vessels about the head, and tenderness or a slight inflammation of the eyes and face, as if the cravat had been too tight. Hence it may be said (by rarifying the blood) to hurt the eyes, and to be prejudicial to epileptics." † These effects shew the difficulty and almost impossibility of dividing esculent from poisonous plants; except indeed such effects are not rather attributable to idiosyncrasy.

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* Hence the proverb δεῖσθαι σελινου, *to be in need only of parsley*, applied to those dangerously ill and not expected to live.

Nearly every part of the plant in its recent state exhales a strong peculiar odour, which is to most persons agreeable, to some unpleasant. The roots have a sweet and slightly warm taste. The leaves are warm, slightly acrid, and bitterish, and the seeds are bitter and aromatic. The aromatic and excitant principle of the leaves appears to be of a fugitive nature; hence the expressed juice will be more powerful than the decoction or the dried plant.

The root contains fecula, and affords, when very large quantities are distilled, a small portion of volatile oil. The leaves also afford a volatile oil, rather pungent and smelling agreeably of the herb, but the seeds are much more abundant in this product. Rectified spirit takes up the virtues of the seeds more completely than water, and the active matter is not impaired in the extract.

Medicinal Properties and Uses.—The root of this plant, in addition to its alimentary quality, is considered diuretic, diaphoretic, and aperitive, and has been recommended in jaundice, visceral obstructions, suppression of urine, calculus ‡, &c.

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* Plinii Hist. lib. xx. c. 11. Alexander de morbo comitiale, p. 152. Boyle's Works, vol. i. p. 503. Hannemann, Eph. Nat. Cur. Dec. iii. Ann. iii. p. 78. Marriote, in Journ. de Med. tom. xxiii. p. 545.

† Alston, Lectures on the Materia Medica, vol. i. p. 381.

‡ Cohen, Diss. de Calculo, p. 31.

It has also been much lauded in various exanthemata, particularly small-pox, in which its efficacy is extremely doubtful. The leaves are esteemed tonic and resolutive, and have been used to disperse tumours of the breasts, in which hemlock and mercury had failed *. The bruised herb applied to the breast is said to disperse the milk †, and to be an excellent remedy for the stings of insects ‡. The seeds, like those of umbelliferous plants in general, are reckoned carminative, and recommended in flatulence, &c., and have also been considered diuretic. Rosenstein § commends an ointment made with the seeds and fresh butter to disperse cutaneous vermin.

The expressed juice has lately been recommended for the cure of intermittent fevers. "Dr. Pott, physician to the hospital of Saulieu, (Cote d'Or,) forwarded a memoir to the academy of medicine, on the employment of Parsley-juice in intermittent fever ; long experience has proved to him that this plant is a powerful febrifuge, and might be used instead of quinine. The juice is extracted in the following manner :—take a handful of fresh Parsley, let it be chopped and then pounded, pour on it an ounce of water, then pound it again and pour the whole on a wet linen rag, then wring it over a vessel destined to receive it. Three ounces to be taken at two different times a few hours before the fever comes on. Intermittent fevers that have not been cured by quinine have been completely so by this remedy. Tournefort has noticed the beneficial effects of Parsley-juice frequently employed in intermittents." ||

The root formed one of the five greater aperient roots of the old Pharmacopœias, and a syrup was made from it which was held in great estimation. An infusion of one or two drachms of the root or seeds (fruit) to a pint of water, may be given in doses of a cupful in diseases to which they are applicable. The distilled water prepared from the leaves and seeds appears to have little efficacy.

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* Lange, Misc. verit. Med. p. 26.

† Chomel, Usuelles, tom. i. p. 279.

‡ Tissot, Avis. Lyons, p. 359.

§ Barnsjukd, Ed. 3. p. 535.

|| Continental and British Medical Review, No. iii. p. 139.

CXLIV.

MENTHA PULEGIUM.

Pennyroyal.

Class, &c. See Mint (*Mentha piperita*).

Spec. Char. Flowers whorled. Leaves ovate, downy, obtuse. Stem prostrate. Pedicels slightly downy. Calyx downy, its teeth fringed.

SYNONYMES.

Greek.....	γληχων. *Dioscorides.*
Latin	Pulegium latifolium. *Bauh. Pin.* 222.
	Pulegium regium. *Ger. Em.* 671.
	Pulegium vulgare. *Park. Theatr.* 29.
	Pulegium. *Raii Syn.* 235.
	Mentha Pulegium. *Lin. Sp. Pl.* 807. *Eng. Fl.* iii. p. 87. *Eng. Bot.* t. 1026.
French. ..	Pouliot ; Avolon.
Italian. ..	Puleggio.
Spanish ..	Poleo.
Portuguese	Poejo.
German ..	Poley.
Dutch....	Poley.
Danish. ..	Poley.
Swedish...	Puleja.
Polish	Poley.
Bohemian .	Poleg.
Chinese ..	Po-ho.

Description.—The root is perennial, firm, creeping, and furnished with numerous fibres. The stems are prostrate, slender, obtusely quadrangular, branched, downy, and rise to the height of eight or nine inches. The leaves are opposite, shortly petiolate, frequently deflexed, ovate, obtuse, somewhat crenated, covered with short hairs beneath, and marked with small semi-transparent pores. The flowers are arranged in dense, axillary, opposite cymes, resembling whorls, gradually smaller towards the summit of the stem. The calyx is tubular, striated, pubescent, with five small, unequal, ciliated teeth, the mouth closed with hairs during the maturation of the fruit. The corolla is of a pale pink or lilac colour, sometimes white, pubescent externally, the tube longer than the calyx; the limb of four nearly equal obtuse lobes, of which the upper one is entire. The stamens are didynamous, erect, diverging, longer than the corolla; the anthers oblong, with two parallel cells. The germen is small, four-lobed, supporting a filiform style, and a bifid stigma, longer than the corolla. The fruit consists of four small nuts, (some of which are frequently abortive,) situated in the persistent calyx. Plate 36, fig. 4, (*a*) leaf magnified, shewing the pores; (*b*) entire flower, magnified; (*c*) pistil; (*d*) longitudinal section of the calyx, to show the nuts.

Pennyroyal grows on moist heaths and pastures, and by the margins of brooks, but is not so frequently found wild in this country as cultivated in gardens, where it is generally erect, not procumbent in its growth, and altogether more luxuriant than in its native state. It flowers in August and September.

This plant appears to be the γληχων of Dioscorides[*]. Pliny states that it is called Pulegium, from *pulex*, a *flea*, because its odour is obnoxious to that insect; hence also the French name *pouliot*. According to Gerard it is called in English, Pennyroyal, Pudding-grass, Pulial-royal, and of some Organy.

Pennyroyal was employed by the ancient Greeks as a condiment for seasoning different viands, as at present in this and other countries.

QUALITIES.—This plant has a fragrant, somewhat spirituous odour, and a warm, pungent, aromatic taste, causing a sensation of heat in the mouth and pharynx. It contains a very fragrant, pungent, essential oil, which rises freely in distillation, and is more volatile than that of Mint. An hundred weight of the fresh herb yields an average product of one pound of essential oil. It affords a small quantity of camphor.

MEDICINAL PROPERTIES AND USES.—Peppermint and Pennyroyal are much alike, not only in physical but in medicinal qualities. The latter is more energetic, and is generally considered more useful as a carminative and emmenagogue, though less efficacious as a stomachic. Its excitant powers are such that, according to Haller[*], the external application of it has produced irritation of the skin and even ulceration. In addition to its tonic and excitant effects upon the stomach, it sometimes acts, either directly or sympathetically, upon the surface of the body, at other times upon the kidneys, promoting the secretion of urine, and more frequently it excites the bronchial exhalation, and thus facilitates expectoration. From its prompt and vigorous action upon the nervous system it is especially regarded as an antispasmodic and anti-hysteric.

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[*] Mat. Med. lib. iii. c. 361.

The alcoholic infusion of this plant, in defect of more powerful remedies, has been used in syncope, asphyxia, and paralysis. It has also been employed in amenorrhœa[†], asthma, hysteria, hypochondriasis, atonic gout, and flatulence. Ray[‡], Boyle[§], Sauvages[||], and others, have particularly recommended the aqueous infusion in hooping-cough, but Werlhoff[¶] and Cullen[**] think it injurious rather than beneficial. "It must not be forgotten that this plant is essentially stimulant, and although admissible in convulsive cough and other affections when accompanied with atony and exempt from phlogosis and irritation, it will be hurtful in contrary circumstances."[††]

The theiform infusion is given in variable doses. The vinous infusion may be administered in the quantity of a wine-glassful at a time. From two to six drops of the essential oil[‡‡] may be given upon sugar, in emulsion, or with egg. The dose of the distilled water[‡‡] is from one to three ounces. The spirit[‡‡], which is similar in virtues to that of spear-mint, is prescribed in doses of one to three drachms.

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[*] Hist. stirp. Helv. 221.

[†] "An infusion of the herb in white wine, I have never known to fail." *Haller*, l. c.

[‡] Hist. Pl. tom. i. p. 534.

[§] Boyle's Works, t. iv. p. 475.

[||] Nosol. method. tom. ii. P. 2. p. 157.

[¶] Comm. Noric. 1733, p. 173.

[**] Mat. Med. vol. ii. p. 150.

[††] Flore Medicale, tom. v. p. 242.

[‡‡] Pharmacopœia Lond. 1836.

CXLV.

PŒONIA OFFICINALIS.

Common Peony.

Class XIII. Polyandria.—*Order* II. Pentagynia.

Nat. Ord. Ranunculaceæ.

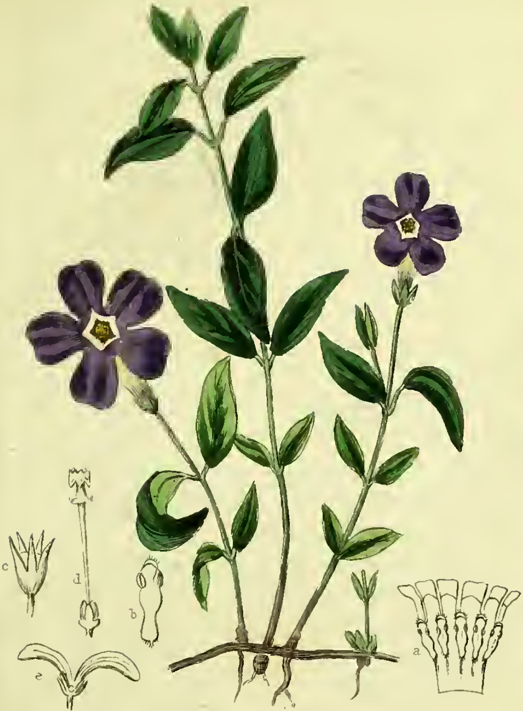
Gen. Char. *Calyx* of five leaves. *Petals* five to ten. *Follicles* two to five, many-seeded, crowned with the bilamellated stigmas.

Spec. Char. Follicles downy, nearly straight; leaves with unequally incised smooth segments, their lobes ovate, lanceolate.

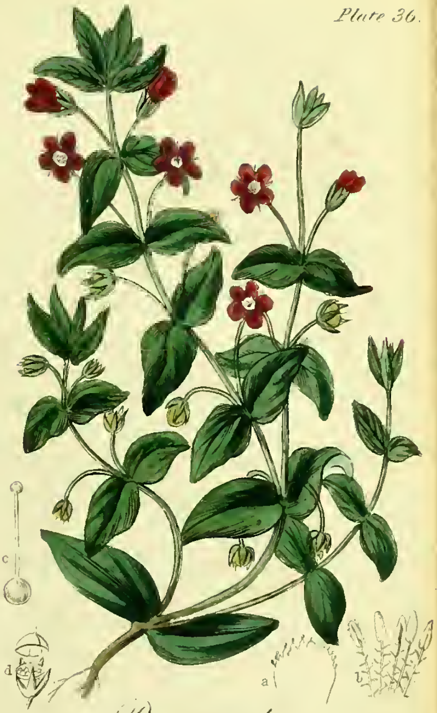
SYNONYMES.

Greek....	παιονια γλυκυσιδη.
Latin....	Pœonia communis vel fœmina. *Bauh. Pin.* 323. *Tourn. Inst.* 274. Pœonia fœmina. *Ger. Em.* 981. Pœonia officinalis var. α. *Lin. Sp. Pl.* 747. Pœonia officinalis. *Retz. Obs.* 35. *Willd. Sp. Pl.* ii. p. 1221. *Smith. Prod. Fl. Græc.* i. p. 369.
French...	Pivoine; Pione.
Italian....	Peonia.
Spanish ..	Peonia; Rosa del monte; Rosa Alberdera.
Portuguese	Peonia; Rosa Albardeira.
German ..	Pfingstrose; Königsrose; Gichtrose; Koenigsblume.
Dutch....	Peoine.
Danish. ..	Peon; Gigtrose.
Swedish ..	Pion.
Polish ...	Piwonia.
Russ......	Pionnaja rosa.

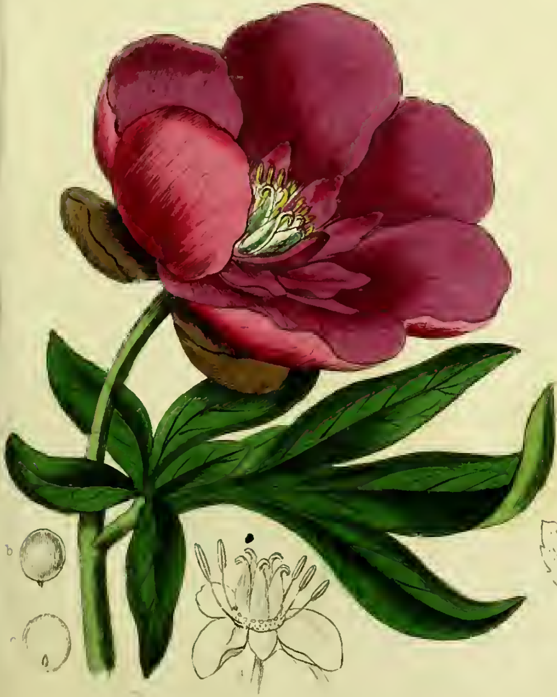
Description.—The root is perennial, tuberous, thick, fleshy, somewhat fasciculated. The stems are erect, cylindrical, thick, succulent, smooth, branched, often purplish red, and attain the



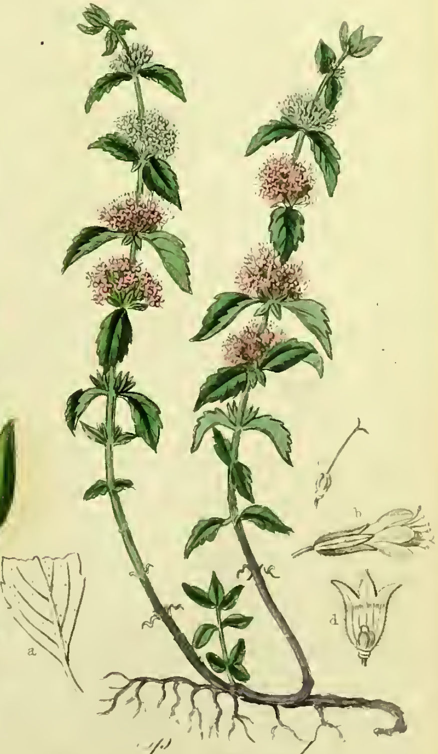
Periwinkle.



Pimpernel.



Peony.



Pennyroyal.

height of two or three feet. The leaves are alternate, petiolate, doubly winged, with unequal segments, and oblong or ovate-lanceolate lobes, glabrous and deep green above, whitish beneath. The flowers are large, solitary, terminal, of a deep red colour. The calyx consists of fine unequal, ovate, concave sepals. The petals are large, rounded, concave, destitute of claws, and vary in number from five to ten. The stamens are numerous, attached to the receptacle, with short slender filaments supporting oblong anthers. The germens varying in number from two to five, are ovate-lanceolate, surrounded at the base by a fleshy disk, and crowned by sessile, thick, obtuse, curved stigmas. The fruit consists of two to five capsules or follicles, ovate, pubescent, nearly straight, bright red within, crowned with the bilamellated stigmas, and containing numerous dark shining seeds. Plate 36, fig. 3, (*a*) calyx and pistils with a few stamens remaining ; (*b*) seed ; (*c*) longitudinal section of the same, shewing the embryo at the base of the albumen.

Common Peony grows wild in woods and stony places in Switzerland, some parts of France, Spain, and Siberia, and is very commonly cultivated in the British garden, for the sake of its showy flowers, which appear in June.

The name Pœonia is derived from that of Peon, the celebrated physician, who, according to the ancient mythology, first discovered the medicinal properties of the plant, and with it cured Pluto of a wound inflicted by Hercules.

The genus is noted for the splendour of its flowers and the luxuriance of its foliage. The varieties of common Peony, with purple or rose-coloured double flowers, are those usually cultivated. The Chinese Tree Peony (*Pœonia Moutan*) is also prized for the beauty of its flowers. The edible Peony (*P. edulis*) is so called from its being used by the Daurians and Monguls as a culinary vegetable.

Old authors speak of two varieties of Peony, male and female, the former* distinguished by its smaller size, and lighter coloured flowers ; and considered by some more efficacious as a medicinal plant. Retzius constitutes the *Pœonia mas* of the ancients a distinct species, *P. corallina.* There is probably little difference in the qualities of either species, so that the single-flowered kinds be employed, those with double flowers being much less effective.

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* Various ridiculous stories are related of this plant by Theophrastus, Pliny, Ælian, and others. Ælian designates it the *Aglaophotis* of the earth, or *Cynospastus*, and Josephus (Hist. Jews, vii. c. 25.) calls it *Baaras ;* affirming that it is not gathered without danger, and that a string must be fastened to it in the night, and thus rooted up by a dog, &c.

QUALITIES.—The root is brown externally, white within, diffusing a faint, unpleasant, sub-narcotic odour, and a mucilaginous, subacrid taste, with some bitterness and astringency. The flowers have a more decided narcotic odour than the root, and an austere sweetish taste, which they yield, together with their colour, both to water and spirit. The seeds have similar properties to the root, and both furnish, when treated with rectified spirit, an extract which is bitterish and astringent, while the aqueous extract is nearly inert. The seeds appear to contain a portion of oil and fecula; the tubers of the root also afford starch in the same manner as the potato; much of their efficacy is lost in drying.

MEDICINAL PROPERTIES AND USES.—If implicit confidence might be placed in the accounts handed down to us of the cures effected by this plant, it might truly be called an heroic medicine. Galen* speaks of the root as a remedy for epilepsy, being cut into thin slices and suspended about the neck as an amulet. Fernel†, Willis‡, and Brendel also consider it a valuable remedy in this disease, but they recommend it to be given internally twice or thrice a day. Home§, who administered it to two epileptics at the Edinburgh Infirmary, states that one of them received temporary advantage from its use, others have observed no benefit to result from it; but this want of success has been attributed to the employment of the cultivated ornamental variety of the plant. The root, seeds, and flowers have also been commended in various convulsive disorders, and in vertigo, night-mare, and obstructions of the viscera. Hippocrates considered the root to exert a special influence upon the uterus, by virtue of its action on the nervous system; and there is probably some truth in this opinion, although modern experiments are wanting to confirm its powers and to acquaint us more precisely with its *modus operandi.*

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* De Simpl. lib. vi. p. 807, ed. RICC.

† De abdit. rer. causis, lib. ii. cap. 17.

‡ Pathol. cerebri, cap. 3, p. 30. sqq.

§ Clin. Experiments, &c., ed. 2. p. 209.

The root has been given in the dose of two or three scruples, twice or thrice a day, or the expressed juice mixed with sherry wine and sweetened with sugar; the bruised root or the expressed juice is also made into a syrup. A distilled water and a conserve have been made with the flowers, which are now seldom employed; the latter is the more preferable form. "Ettmuller recommends an anti-epileptic emulsion made with the seeds beaten up with the distilled Peony water, loaf sugar, and gum arabic as a remedy for the terrific dreams and nocturnal terrors of children, which are often the precursors of epilepsy."* The root likewise enters into several anti-epileptic powders, to which, however, much confidence cannot be granted.

* Waller, Brit. Dom. Herb. p. 271.

CXLVI.

VINCA MINOR.

Lesser Periwinkle.

Class V. Pentandria.—*Order* I. Monogynia.

Nat. Ord. Apocyneæ.

Gen. Char. *Calyx* five-parted. *Corolla* hypocrateriform, the segments oblique, spirally imbricated in the bud. *Filaments* dilated at the end into concave scales. *Follicles* two, erect; *seeds* naked.

Spec. Char. Stems procumbent. Leaves elliptical-lanceolate, glabrous at the margin. Calycine teeth small, lanceolate, glabrous.

SYNONYMES.

Greek	*κληματις δαφνοειδες.*
Latin.	Clematis Daphnoides minor. *Bauh. Pin.* 301. Vinca Pervinca minor. *Ger. Em.* 894. *Raii Syn.* 268. Clematis daphnoides. *Dod. Pempt.* 405. Vinca minor. *Lin. Sp. Pl.* 304. *Eng. Fl.* i. p. 338. *Eng. Bot.* t. 917.
French. ..	Pervenche; Violette des Sorciers.
Italian. ..	Pervinca; Centocchio.
Spanish ..	Pervinca; Yerba Doncella.
Port.	Pervinca.
German ..	Kleines Sinngrün; Jungfernkrone; Wintergrün; Ungrün.
Dutch	Vinkoorde; Maagdenpalm.
Danish....	Singroen.
Polish	Barwinek.

Description.—The root or rhizoma is perennial, creeping, slender, and fibrous. The stems are slender, ligneous, creeping, cylindrical, very smooth, and from four to twelve inches in height. The stems are nearly sessile, opposite, elliptical-lanceolate, coriaceous, glabrous, deep shining green, very entire, and smooth at the margin. The flowers are solitary, axillary, supported on peduncles longer than the leaves. The calyx has five glabrous, lanceolate, somewhat subulate teeth, shorter than the tube of the corolla. The corolla, which is spirally imbricated in the bud, exhibits a whitish tube, dilated at the summit, a plaited orifice, and a limb with five plane, oblique, truncate segments of a purplish blue colour, rarely white. The stamens are five, included, with short filaments enlarged towards the summit into membranous scales, terminated by erect, obtuse, cuneiform, approximated anthers. The germens are two, sub-globose, with two glands at the base; style obconical, supporting a roundish depressed body, upon which is situated the concave, knobbed, woolly stigma. The fruit* consists of two elongated, erect, diverging follicles, one-valved, opening longitudinally, and containing several oblong, furrowed, naked seeds. Plate 36, fig. 1, (*a*) tube of corolla opened to show the stamens; (*b*) stamen magnified; (*c*) calyx and germens; (*d*) pistil; (*e*) fruit, composed of two follicles.

Lesser Periwinkle is found in hedges and woods in this country, but too often near shrubberies to warrant the idea of its being truly indigenous. It flowers in May and June, and again in autumn.

The generic name is derived from *vincio, to bind,* from its being used in the olden time as a coronary plant, in which character it was employed at public festivals, weddings, and funerals. It was formerly called in Botanical works, *Pervinca*, from *pervincere, to overcome,* as some imagine, because it resists the winter's cold: hence also the French *Pervenche*, and the English Periwinkle or Pervinkle. It has also been called Clematis, because of its tendency to climb, and Chamœdaphne from the aspect of its leaves.

The different species of Vinca are valued for their beauty, and long continued flowering. There are cultivated varieties of *V. minor*, with silver striped, gold striped, and double flowers. The other British species, the greater Periwinkle (*V. major*), differs from the preceding in its somewhat erect stem, and ovate-cordate leaves, whose margin, as well as those of the

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* The fruit is not often to be met with, as the plant increases chiefly by the root. It may be obtained however, by confining the plant in a pot, and preventing the excessive increase of the roots.

subulate, calycine segments, are ciliated: it is also twice the size of the former in all its parts.

Chaucer, in his "Romaunt of the Rose," mentions the Periwinkle as one of the ornaments of the God of Love; and in the same poem, speaking of a garden, he says:—

> "There sprange the violet al newe,
> And fresh pervinke, rich of hewe,
> And flouris yellowe, white and rede;
> Such plente grew there ner in mede."

QUALITIES.—The plant is totally inodorous; of a persistent bitterish taste in its recent state, and astringent * when dried. The bitter principle is soluble in water; the aqueous infusion of the recent plant is of a yellowish colour, almost inodorous, very bitter, and throws down a dark precipitate with sulphate of iron.

MEDICINAL PROPERTIES AND USES.—Periwinkle has been much extolled for its power of arresting hæmorrhages. The bruised leaves, we are told, introduced into the nostrils have been efficaciously used to stop bleeding at the nose †. The aqueous decoction, taken internally, is also reputed to be useful for repressing hœmoptysis, sanguineous hæmorrhoids and excessive menstruation ‡, also in chronic diarrhœa and other fluxes, in which, from its tonic and astringent qualities, it is undoubtedly a useful remedy, although seldom or never used in the present day. A decoction of the plant in whey has been stated to be serviceable in pulmonary phthisis. Agricola §, Tissot ||, and Bourgois speak of its efficacy as a gargle in inflammatory sore throat; others have recommended it in the same form in relaxation of the palate and uvula, in atonic engorgements of the mouth and pharynx, and in some affections of the gums. The infusion in the form of tea is reputed to be useful in fluor albus.

The infusion or decoction, made with an ounce of the recent or half an ounce of the dried plant to a pint and a half of water, may be given at two or three doses as frequently as circumstances may require.

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[*] The leaves, on account of their astringency, have been recommended for tanning leather.

[†] Chomel, Usuelles, tom. ii. p. 273.

[‡] Tournefort, Hist. de Pl. de Paris, tom. i. p. 371.

[§] Instit. Chir. f. m. 225.

[||] Avis, p. 152.

CXLVII.

ANAGALLIS ARVENSIS.

Scarlet Pimpernel.

Class V. PENTANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. PRIMULACEÆ.

GEN. CHAR. *Calyx* five-parted. *Corolla* rotate. *Stamens* hairy. *Capsule* one-celled, bursting all round transversely.

SPEC. CHAR. Leaves ovate, sessile, three-nerved, dotted beneath. Petals obtusely crenate, with glands.

SYNONYMES.

Greek	αναγαλλις.
Latin	Anagallis phœniceo flore. *Bauh. Pin.* 252. *Park. Theatr.* 558. *Raii Syn.* 282. Anagallis mas. *Ger. Em.* 617. *Dod. Pempt.* 32. Anagallis arvensis. *Lin. Sp. Pl.* 211. *Eng. Fl.* i. p. 280. *Eng. Bot.* t. 529.
French....	Mouron ; Mouron rouge.
Italian....	Pimpinella ; Anagallo.
Spanish....	Anagallo ?
Portuguese.	Murriao.
German....	Rothes Gaucheil ; Ackergauchiel.
Dutch.....	Guichelheil Manneken ; Bastard-muur.
Danish....	Rodarve ; Gaaseheel ; Grine ved middaj.
Russ.	Kurjatschja noga trawa.

DESCRIPTION.—The root is annual, tapering, descending, whitish, and furnished with numerous slender fibres. The stems are procumbent, nearly quadrangular, furrowed, branched at the base, and from three to six inches in length. The leaves an opposite, ovate, acute, sessile, three-nerved, shining green, entire, sprinkled with purplish dots beneath. The flowers are solitary, axillary, opposite, on long cylindrical peduncles. The calyx consists of five lanceolate, acute, spreading segments, keeled beneath. The corolla is rotate, bright scarlet, with a deep purplish tinge at the base, composed of five ovate petals* connected by the claws, the margins crenate with glandular hairs. The stamens are five, erect, with purplish hairy filaments attached to a prominent disk below the germen, and yellow, simple, cordate anthers. The germen is globose, supporting a cylindrical, rather oblique style, as long as the stamens, tipped with a capitate greenish stigma. The fruit, suspended on a recurved stalk, is a globose, one-celled capsule, embraced by the persistent calyx, opening transversely all round, and containing several angular seeds. Plate 36, fig. 2, (*a*) magnified view of a petal, shewing the glandular hairs of the margin; (*b*) stamens magnified; (*c*) pistil; (*d*) capsule, natural size.

This pretty herbaceous plant is frequent in corn-fields, sandy places, and in rich garden soil, flowering from June till August.

The generic name is derived from *αναγελαω, to laugh;* because, according to Dioscorides and Pliny, the plant removes obstructions of the liver and spleen, which induce sadness; or as some suppose on account of the beauty of its flowers.

Pimpernel is one of the *flores horologicæ,* its flowers expanding regularly about ten minutes past seven, and closing about a quarter past two. It is also hygrometrical, for on the approach of rain, or when there is much moisture in the atmosphere, the flowers either do not open, or close up again. On this account it is called provincially *poor man's weather glass.*

Another British Pimpernel, but scarcely distinct as a species, is the *A. cærulea,* distinguished by its blue flowers, and the margin of the corolla scarcely at all glandulose. It grows in corn-fields, but is much less frequent than its congener. The Bog Pimpernel, (*A. tenella,*) with its creeping filiform stem, roundish, ovate, stalked leaves, and rose-coloured flowers, is very different from either, and might perhaps form a new genus.

According to Bechstein, the Pimpernel is much relished by sheep, and it was formerly in great repute for curing the giddiness to which that animal is subject. The seeds are much sought after by small birds.

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* The petals, or more correctly the divisions of the corolla, are nominally five, but in rich soil they vary to six and seven; with sometimes a corresponding increase of stamens.

Qualities.—The plant is inodorous; to the taste it is somewhat acrid, bitter and sub-astringent. The aqueous infusion slightly reddens turnsol, and becomes of a dark grey colour by the addition of sulphate of iron. The expressed juice, depurated by settling, and then inspissated to the consistence of an extract, has a pungent, saline austerity.

This plant, so far from being inert as some have asserted, is capable of producing very potent effects upon the animal economy, and Orfila places it among the narcotico-acrids, in the same rank with Birthwort, Rue, &c. He gives the following account of its effects upon animals:—

> "At eight in the morning three drachms of the extract of Pimpernel, prepared by evaporating in a water-bath the juice of the fresh plant, were introduced into the stomach of a robust dog. At six in the evening he was dejected, and at eleven sensibility appeared diminished. The next morning at six he was lying down, apparently dead, and might be displaced like a mass of inert matter. He expired half an hour after. The mucous membrane of the stomach was slightly inflamed; the interior of the rectum was of a bright red colour; the ventricles of the heart were distended by black coagulated blood; the lungs presented several livid spots, and their texture was preternaturally dense. Two drachms of the same extract applied to the cellular texture of a dog's thigh, caused death in twelve hours with the same symptoms as the preceding. M. Gronier gave to horses some tolerably strong doses of the decoction of this plant, and he observed almost constantly a trembling of the muscles of the posterior extremities as well as those of the throat, and a copious flow of urine. After death the mucous membrane of the stomach was found inflamed."*

Medicinal Properties and Uses.—Many of the old practitioners considered this plant a remedy for mania and melancholy †. Quercetanus ‡, who was celebrated for his treatment of mania, made use of a simple decoction of Pimpernel, having previously administered to the patient emetics and strong purgatives. Others employed the tincture, or the expressed juice either alone or combined with the tincture of St. John's Wort. It was also employed in the low muttering delirium of fevers with reputed success. Dioscorides mentions it as a remedy for the bites of vipers *, hence it came to be administered in hydrophobia, and obtained considerable reputation as an antillysic †. Ravenstein ‡ brings forward several cases of persons bitten by rabid animals, who recovered by the free use of this plant. More recently Gmelin §, has enumerated several cures produced by it. He exhibited every six hours twenty grains of the powdered herb in a cupful of an infusion of the plant, combined with fifteen drops of volatile alkali. This was continued for four days, the infusion being taken for ordinary drink, and linen saturated with the infusion, was at the same time kept constantly applied to the wounded part. In some cases baths impregnated with the plant were used, the wounds were scarified, mercurial ointment was rubbed in, and twice the above dose was exhibited.

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* Toxicologie, tom. ii. p. 295.

† Hartmann. Prax. Chim. in Opera. om. Ed. Johren. p. 16. Willis de anim. brut. cap. xii. Fr. Hoffmann. Meth. Med. p. 290. Maroldi Pract. Med. p. 93. Michaelis Opera, p. 740.

‡ Apud Etmuller, Ed. Mang. Opera. tom. i. p. 586.

It has thus been recommended in two of the most terrific diseases to which the human frame is subject, and if its efficacy could be established in either of them, it would deservedly rank as one of the most precious of remedial agents. It has moreover been considered efficacious against the plague ||, epilepsy, hysteria, calculus, gout, dropsy, hæmorrhages and phthisis ¶, also a useful application to the eyes in dimness of sight ** and to ulcers. Ray affirms that the distilled water mixed with milk, is extremely beneficial in pulmonary consumption; if any benefit however is to be expected from it in this disease, the expressed juice or the decoction will be preferable to the distilled water.

Two ounces of the expressed juice or of a strong decoction or infusion, may be taken at a dose. The extract prepared by inspissating the juice, appears to contain all the virtues of the plant, and may be given to the amount of a scruple or half a drachm. The tincture is highly commended by some writers.

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* Mat. Med. lib. ii. cap. 209.

† Boch, Kreutterbuch. fol. 126. Tabernamontanus, Krauterb. *Basil.* 1731. p. 1093.—Camerarius, Hort. Med. et Phil. p. 14.

‡ In C. L. Bruch's Diss. de Anagallide, *Argentor.* 1768.

§ Almanach Veterinaire, 1791.

|| "Tragus directs the patient seized with the plague to take a moderate draught of a decoction of it in wine, then to cover themselves up well in the bed clothes and encourage the sweating. Indeed, in all febrile complaints this practice will be found beneficial." *Waller*, l. c.

¶ Vide *Zorn*, Botan. Med. p. 63.

** Dioscorides, Mat. Med. *loc. cit.*

CXLVIII.

PINUS SYLVESTRIS.

Scotch Pine.

Class XXI. Monœcia.—*Order* VIII. Monadelphia.

Nat. Ord. Coniferæ.

Gen. Char. Male Flowers: *Anthers* 2-celled. Female Flowers: *Scales* in a pyramidal cone, bracteate at the base, digynous. *Pericarps* attached to the inside of the scale, more or less winged, deciduous. Stigmas bifid or trifid.

Spec. Char. Leaves in pairs, rigid. Cones pyramidal-ovate, acute, as long as the leaves, generally in pairs. Crest of the anthers very small.

SYNONYMES.

Greek	πιτυς.
Latin	Pinus sylvestris. *Bauh. Pin.* 401. *Ger. Em.* 1356. *Raii Syn.* 442. Pinus sylvestris montana. *Cam. Epit.* 40. *Matth. Valgr.* v. i. 89. Pinus sylvestris. *Lin. Sp. Pl.* 1418. *Eng. Fl.* iv. p. 158. *Eng. Bot.* t. 2460. *Lambert. Pin.* i. t. 1.
French	Pin; Pin sauvage.
Italian	Pino.
Spanish	Pino; Pino selvoso.
Port.	Pinheiro; Pinheiro bravo.
German.	Kiefer; Kiene; Kienbaum; Gemeine Fichte.
Dutch.	Wilde Pynboom; Sparreboom.
Danish	Furr; Fyrretræ.
Swedish.	Furu; Tall.
Polish.	Sosna Borowa.
Russ.	Sosna.
Lapl.	Betze.
Japanese	Maatz.
Chinese	Sum.

Description. The Scotch Pine is a lofty tree, often attaining the height of eighty or ninety feet, but is seldom straight in its growth; the branches are numerous, oblique, covered with a rough, brown bark, which scales off in large thin flakes. The leaves arise in pairs from a tubular, membranous sheath; they are evergreen, rigid, linear, straight, acute, somewhat curved, rather concave, of a glaucous, green colour, two inches or more in length, furnished at the base of the sheath with a small, reddish scale. The flowers are terminal and erect, monœcious, united in catkins. The male are disposed in small, short, compact, terminal, yellowish catkins, composed of scales umbricated in a spiral manner, soon surmounted by a protruding leafy branch; the filaments are very numerous, connected below into a cylindrical column, with oblong, wedge-shaped anthers of two cells, crowned with a jagged, membranous crest. The female flowers constitute an ovate, roundish catkin, variegated with green and purple, each bractea containing two naked ovaries. The year after impregnation, the young fruit or cone becomes lateral stalked, reflexed, and of a more ovate figure; and the second year, the scales being indurated, forms an ovate, pointed, tessellated, woody cone*. The winged seed has a hard crustaceous integument. Plate 37, fig. 3, (*a*) the male catkin with its bracteæ; (*b*) the anthers; (*c*) the crest of the anthers; (*d*) the female catkin with its bracteæ; (*e*) a ripe cone; (*f*) seed with its wing.

This tree forms extensive forests in some mountainous, dry, and barren situations, and occurs throughout Europe as far north as Lapland. It is the only indigenous species, and is frequent in Scotland, especially at Invercauld in Inverness-shire, and Gordon Castle, Aberdeenshire. The generic name is derived from the Celtic *pin* or *pen*, a rock or mountain. It was called *Pin* in Armoric, *Peigne* in Erse, *Pinna* in Welsh, and *Pinn* in Anglo-Saxon.

The genus Pinus, as now limited, contains, besides the preceding, the Corsican Pine, (*P. laricio*,) a fine, handsome tree; the Cluster Pine, (*P. pinaster*,) a great favourite with some of the old painters; its timber is cut into shingles for covering houses in Switzerland; the Stone Pine, (*P. Pinea*,) the seeds of which are sweet like almonds, with a slight flavour of turpentine, and are eaten throughout Italy; the Frankincense Pine, (*P. Tæda,*) valuable for its timber and resin, and several others. The Larches very properly constitute a distinct genus, *Larix; L. communis* yields the Venice turpentine.

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* Commonly called "*pine-apple*."

General Uses. This tree affords the red or yellow deal of the north of Europe, and is esteemed next in value to the Larch. The wood is employed in making masts, rafters, floors, wainscoats, tables, and for numerous other purposes. It is also burnt as firewood, and forms excellent charcoal. In the highlands of Scotland the roots are used by the poor as a substitute for candles. The tops or young shoots are given to animals during the winter season instead of fodder. The outer bark is employed in tanning leather, and the inner rind is sometimes converted into ropes. The *bark-broed* of the Laplanders is made from the inner bark of this tree, in the following manner: "they select the loftiest trees, and those which are least branched and contain least resin; the dry and scaly outer bark is completely removed, and the inner soft, white, and succulent bark is alone selected: (this operation, therefore, is at that season of the year when the alburnum is soft, and easily separates from the wood). When required for use, it is slightly roasted over burning coals, then broken in pieces and ground to powder or flour; this flour being mixed with water, forms a very limp kind of bread, which is baked in an oven, and forms, not unfrequently, part of their food for a year together. The Novaccolæ also fatten their pigs upon this substance *.

The trunk and branches afford turpentine, resin, tar, &c., the mode of obtaining which is subjoined. Lamp-black, so frequently used in the arts, is made from the dregs left in the preparation of tar, the smoke of which, ascending through a horizontal chimney, enters a kind of box, pierced with holes at the top, and covered with a sort of linen cone where it deposits the soot.

Turpentine, the produce of the Scotch Pine, is more coarse and dense than any other sort; its consistence is that of honey, and the taste is bitterish, acrid, hot, and unpleasant. Those trees which are most exposed to the sun and have the thickest bark yield it in the greatest abundance. The time of procuring it is from May to September. After the outer bark has been removed, the inner bark and a thin slip of the wood are cut off, and a wound is made with a sharp tool about three inches square by an inch deep. The resinous juice soon begins to exude, and runs down the trunk into a trough placed to receive it. This is called *pure dipping*, (*Terebinthine brute*, Fr.,) while the juice which concretes in the wounds is called *galipot* or *barras*.

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* Linnæi Flora Lapp. ed. Smith, p. 285.

Oil of Turpentine is obtained by distilling the galipot with water in a common still, when the oil is found in the receiver swimming on the water, from which it is easily separated; the average proportion is 60 pounds of oil from 250 pounds of good turpentine. When rectified, it is called *spirits* or *essential oil*.

Common or *Yellow Resin* is the residue of the distillation of the essential oil. When the process is performed without the addition of water, to dryness, the produce is deeper coloured and transparent, and is designated *black* or *common resin* or *colophony*[*]*:* but when agitated with water while yet fluid, it is named yellow resin. A similar and preferable kind of resin is made by melting and agitating the galipot in water.

Tar, (*Pix liquida*, Ph.—*Goudron*, Fr.,) is obtained by a kind of distillation from the wood and roots of this pine, which is cut into billets, and then placed in a conical cavity dug in the ground and piled up in a stack which is covered with turf. Fire is then applied to the wood, and it is suffered to burn slowly; during this process the tar is formed, and runs off at the bottom of the pile into a channel cut for the purpose, and is then collected in barrels. Much of the tar imported into England is brought from the Baltic. The process for obtaining tar at the present day differs but little from that pursued by the ancient Macedonians as described by Theophrastus (Lib. IX. c. 3.) It was probably obtained likewise from other species of pine.

Pitch, (*Pix inspissata*, Ph.—*Brais-gras*, Fr.,) is made by melting coarse hard resin, or *brai-sec*, as it is called in France, with an equal quantity of tar, in large copper vessels. If the process of inspissation be carried to its utmost limit, the pitch becomes hard and dry, and is designated *Pix arida*, which is used only externally.

QUALITIES. *Turpentines*, although procured from various species of the pine tribe, agree in general and chemical properties. They are semi-fluid, transparent, tenacious, combine readily with fixed oils, are very inflammable, and emit much smoke. They are insoluble in water, but soluble in alcohol and ether. They contain essential oil, succinic acid, and resin.

" *Oil of Turpentine* has a strong, penetrating, peculiar odour, and a hot, pungent, bitterish taste. It is perfectly limpid and colourless, extremely light, volatile, and inflammable; its boiling point is 312° Fahrenheit. It dissolves completely in six parts of sulphuric ether; but although it is readily dissolved in hot alcohol, it again separates in drops as the spirit cools. In all other respects it agrees with the volatile oils. A stream of chlorine passed through it converts it into a substance resembling camphor."

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[*] Colophonia was a name given by the ancients to a raw liquid resin brought from Colophon in Ionia, and is described by Dioscorides (*Mat. Med.* lib. i. c. 92.).

"*Tar* has a strong peculiar odour; a resinous sub-acid bitterish taste; and a thick coarse consistence with a deep brown colour approaching to blackness, derived from the charring of the wood during its formation. It consists principally of empyreumatic oil, resin, and acetic acid; is partially soluble in water, and is inspissated by boiling, into pitch.

"*Yellow and white Resin*, are varieties of the same substance. Their taste is slightly acrid and bitterish. The mass of resin is semipellucid, brittle, and vitreous, with a specific gravity of 1.0742. It is insoluble in water, but entirely soluble in alcohol, ether, the fixed oils, and the alkalies. The acid also dissolves resin and converts it into artificial tannin."*

MEDICINAL PROPERTIES AND USES.—It is evident from the writings of the ancients† that they were acquainted with the medicinal uses of turpentines, and in addition to the diseases in which they are now employed, they prescribed them in lethargy, hypochondriasis, coughs, and various pulmonary affections. The turpentines appear to derive their virtues from the essential oil they contain, which is stimulant, cathartic, diuretic, anthelmintic, and externally rubefacient. The essential oil in large doses produces nausea, unpleasant eructations, slight vertigo, or intoxication, and frequently catharsis; in small doses it chiefly acts upon the kidneys; it is remarkable for the violet odour it imparts to the urine, which phenomenon is produced even by remaining for a short time in an apartment which has been recently varnished with the spirit. In consequence of this specific action over the urinary organs, it is frequently given in gleet, in doses of from ten to thirty drops; also in leucorrhœa, and calculous affections, but in the latter from its excitant properties it requires to be used with caution. It is likewise useful in chronic rheumatism and paralysis. As an external stimulant, it proves beneficial in chronic rheumatism, and chronic enlargements of the joints; and is an excellent addition to embrocations in acute rheumatism and paralysis of the limbs. It has also been exhibited in the form of enema in cases of colic, obstinate constipation, and locked-jaw. It is now generally resorted to as a powerful remedy against tape-worm. Moreover Dr. Copeland* eulogises its effects in certain hæmorrhages, dropsies, chlorosis, infantile convulsions, and he confirms Dr. Perceval's assertion of its efficacy in epilepsy. Externally warm oil of turpentine is a useful primary application to extensive burns; and an excellent liniment for this purpose is made with two ounces of the oil, to four ounces of linseed oil. It is also beneficially applied to indolent ulcers where sloughs are to come away.

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* Thomson's Dispensatory, 1836, p. 507.

† See Dioscor. Mat. Med. lib. i. cap. 91. Aretæus *passim*. Plin. Hist. c. xxiv. sec. 6. Alpinus, de Med. Egypt. lib. iv.

Tar is considered stimulant, diuretic, and sudorific, and externally detergent. It has been highly commended in scabies, given in the form of pills with powder of liquorice, and has constituted a favourite domestic remedy in Sweden, for warding off the contagion of small pox†. It has been more generally employed in the form of tar-water, (aqua picis liquidæ) which is prepared simply by pouring boiling water upon tar. *Tar-water* has been administered with advantage in some cases of dyspepsia, occurring in indolent habits; also in porrigo, and other cutaneous affections, both internally and externally. It was formerly much employed in asthma, dyspnœa, &c. Dr. Berkeley‡, Bishop of Cloyne, wrote a dissertation in which he extravagantly lauds the virtues of this remedy, in scorbutus and many other diseases. Sir A. Crichton recommends the vapour of heated tar, (the acid of which has been previously neutralized,) to be inhaled by those suffering under pulmonary consumption.

The recently discovered substance *Creosote*§ is obtained from the oil of tar, chiefly from those portions of it which are heavier than water. It is a colourless transparent liquid, of an oily consistence, with a burning taste, followed by sweetness, and its odour resembles that of wood smoke. It is powerfully antiseptic, and is used in curing several articles of food. In a medical point of view, its character is not yet sufficiently established, but it appears to be the principle to which the various preparations of tar and pitch owe their efficacy. It has proved very successful in the cure of toothache, as an application to burns, scalds, and ulcers, and is a powerful styptic in arresting hæmorrhage from capillary vessels; it has also proved beneficial in several cutaneous affections, in dyspepsia, neuralgia, diabetes, &c From one to three drops given in mucilage is a very efficacious remedy in arresting vomiting occasioned by nervous irritability of the stomach.

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* Med. and Phys. Journal, vol. xlvi. p. 186.

† Jurikes tiduing, 1766, in 52.

‡ Siris, or a chain of Philosophical Reflections and Enquiries concerning the virtues of Tar water. 1744-8.

§ For the preparation, qualities, properties, &c. of this substance, see Cormack's Treatise on Creosote, 1836.

Pitch is seldom employed medicinally, it is reputed to remove corns, and to have proved useful in various rheumatic affections, applied in the form of plaster. The barbarous practice of employing a pitch cap, in the scald head of children, is now very properly abandoned.

The *resins* are only used externally, and enter into some ointments and plasters, in which stimulant or adhesive substances are required.

Linnæus*, and Gmelin†, states, that the buds of the pine are used in Siberia as a remedy for scurvy; they have been given in decoction in milk, whey, wine, or beer. They have also been recommended in dropsy, leucophlegmasia, wandering gout‡, chronic rheumatism, and even syphilis. According to Murray§, the bark, leaves, and tops of pine have similar properties to the buds, and the decoction has been used externally for the same purposes as tar-water. The young cones yield by distillation an essential oil, somewhat resembling that of turpentine, and a resinous extract is prepared from them, which is believed to possess similar properties to the Balsam of Peru.

The dose of the essential oil of turpentine in gleet, &c. is from ten to thirty drops; in rheumatism a drachm may be given every four hours combined with cinchona, and two or three drops of tincture of capsicum; and for expelling tape worm an ounce combined with syrup of poppies, or beat up with yolk of egg and some aromatic water, which should be repeated every eight hours till the desired effect is produced. If the second dose do not operate, some castor oil should be exhibited. Dr. Copeland recommends tincture of capsicum to obviate the unpleasant effects produced by the oil upon the stomach.

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* Flora Suec. p. 874.

† Flora Siberiæ, tom. 1, p. 178.

‡ Bagliv. Opera, p. 117.

§ Appar. Med. tom. 1. p. 5.

CXLIX.

PLANTAGO MAJOR.

Greater Plantain.

Class IV. Tetrandria. *Order* I. Monogynia.

Nat. Ord. Plantagineæ.

Gen. Char. *Calyx* four-cleft. *Corolla* four-cleft, with the segments reflexed. *Stamens* very long. *Capsule* two-celled, bursting all round transversely.

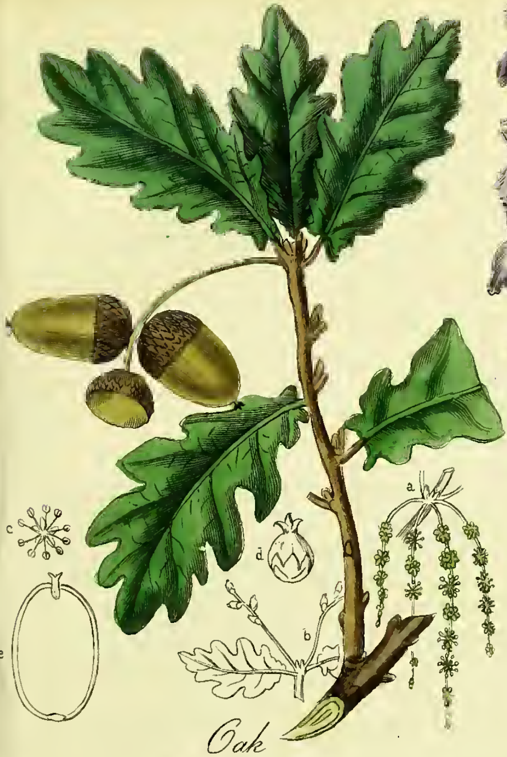
Spec. Char. Leaves broadly ovate, generally shorter than the footstalks. Scape rounded. Spike long, cylindrical. Dissepiment of the capsule plane; cells many seeded.

SYNONYMES.

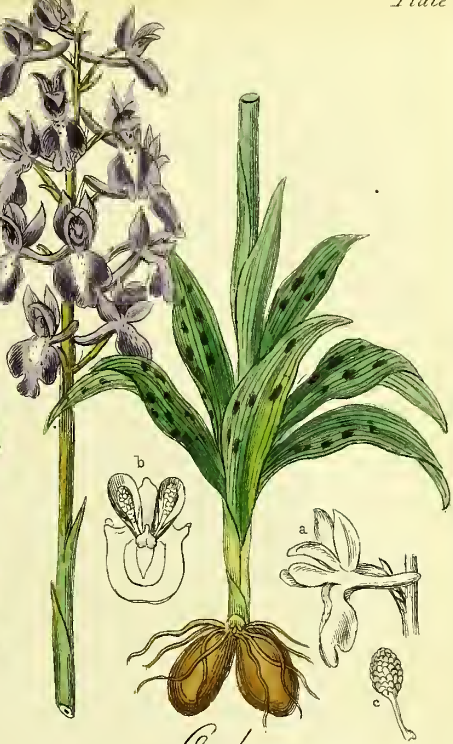
Greek	αρνογλωσσον.
Latin	Plantago latifolia major. *Bauh. Pin.* 189. Plantago latifolia. *Ger. Em.* 419. Plantago latifolia vulgaris. *Park. Theatr.* 493. *Raii. Syn.* 314. Plantago major. *Lin. Sp. Pl.* 163. *Eng. Fl.* i. p. 213. *Eng. Bot.* t. 1558.
French	Plantain; Grand Plantain.
Italian	Piantaggine maggiore.
Spanish ..	Llanten mayor.
Port.	Tanchagem major.
German ..	Grosser Wegerich.
Dutch	Groote Weeggbree.
Danish	Vejbred.
Swedish ..	Grodblad.
Polish	Labka.
Russ.	Popuschnik.
Persian ...	Kanasch.

Description.—The root is perennial, consisting of numerous whitish cylindrical descending fibres which proceed from a hard ligneous stock or head. The leaves are all radical, large,

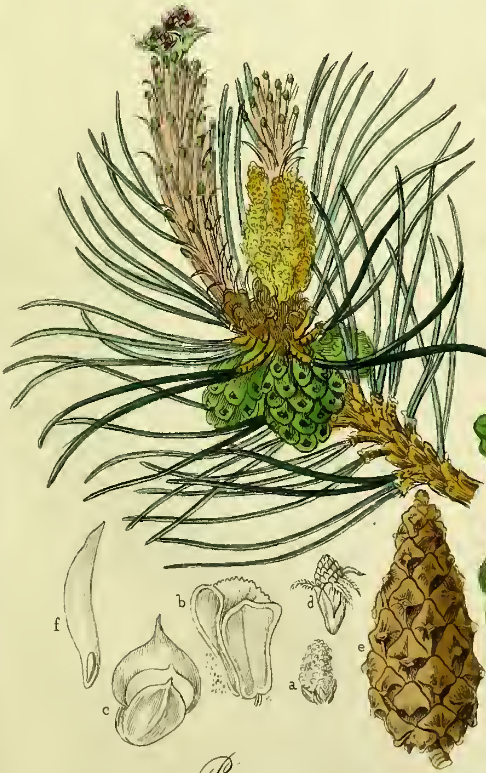
Plate 37



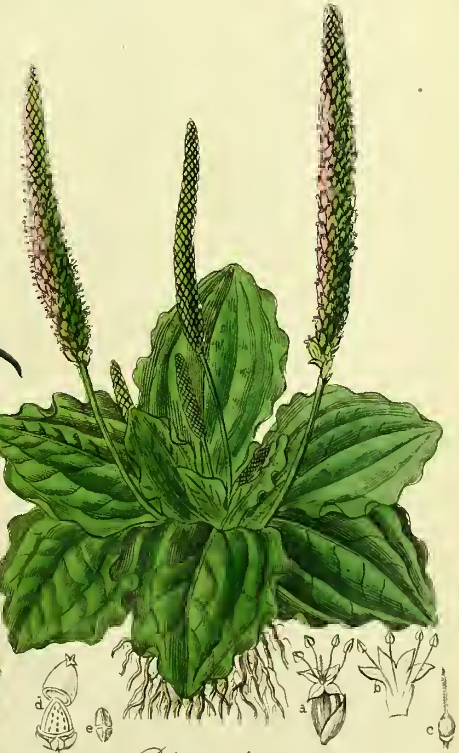
Oak



Orchis



Pine



Plantain

broadly ovate, obtuse spreading, nearly glabrous, entire or toothed, seven-nerved, sinuated at the margin, slightly decurrent upon the channelled petiole which is variable in length, sometimes as long as the leaves. The scape is simple, straight, slightly angular, pubescent upwards, terminating in a slender dense spike from four to six inches in length. The calyx consists of four small, erect, greenish, membranous divisions, with a concave bractea at the base. The corolla is four-cleft, the segments reflexed, of a brownish colour. The stamens are four, with long, capillary, erect, filaments tipped with roundish purple anthers. The germen is inferior, ovate, supporting a filiform style shorter than the stamens, and terminated by a simple hairy stigma. The fruit is an ovate capsule with two cells bursting all round transversely, and containing six or eight oblong, reddish brown seeds in each cell. Plate 37, fig. 4. (*a*) entire flower with its bractea; (*b*) corolla opened; (*c*) pistil; (*d*) capsule, with the superior part detached, magnified; (*e*) seed magnified.

This familiar plant is common nearly all over Europe, by way sides, and in dry arid pastures. It flowers in June and July.

The generic name is of uncertain origin, it is probably derived from *planta* the sole of the foot, in allusion to the broad flat leaves lying close upon the ground. This species is called *way-bred*, from its prevalence on the way-side. "It appears to follow the migrations of man as if domesticated or sympathetically attached to the human race. Thus, though not purposely conveyed, it has followed our colonists to every part of the world, and has among the natives in some of our settlements been emphatically named "The Englishman's Foot," for with a strange degree of certainty wherever it is found, there our countrymen have trod."*

The other British species are:—the Hoary Plantain (*P. media*) with ovate nearly sessile leaves, a rounded scape, and a capsule with two cells, each containing one seed; the Ribwort Plantain (*P. lanceolata*) with lanceolate leaves, angular scape, ovate spike, and each cell of the capsule with one seed; the sea-side Plantain (*P. maritima*), with linear grooved fleshy leaves, woolly at their base; and the Buck's-horn Plantain (*P. Coronopus*) an annual, with linear pinnatifid leaves, and the capsule with four cells, each containing a single seed. There are several varieties of *P. major*, such as the Rose Plantain, in which the flowers appear expanded into leaves like a rose, and the besom Plantain, in which they are imbricated, in a pyramidal form.

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* Burnett's Outlines, p. 1027.

According to the Swedish experiments the foliage of the Greater Plantain is refused by kine and horses, but eaten by goats, sheep, and swine. The seed is well known as the favourite food of many small birds.

Qualities.—This plant is inodorous; the leaves have an herbaceous, bitterish, slightly acrimonious, and sub-astringent taste; the root, especially when dried, has more of a sweetish taste and tinges the saliva of a reddish colour. The aqueous infusion of the fresh leaves is transparent, becoming dark and opaque, and precipitating slowly on the addition of sulphate of iron. The unexpanded flower-spike has a more austere styptic taste than the leaves. The seeds, although somewhat acrid, contain a large quantity of mucilage.

Medicinal Properties and Uses.—Themison is reputed to have first introduced the Plantain into use. Dioscorides [*] is very lavish of praise with regard to its manifold virtues; he commends it in inflammations, pustules, bleedings, bites of rabid animals, tumours, ulcers, also for ophthalmia, hysteric fits, dysenteries, &c., externally applied, and internally for fluxes, hæmorrhages, dysentery, asthma, phthisis, ulcers in the kidneys and bladder; and as a remedy for intermittent fevers. Galen [†] follows him with nearly the same category, to which he adds, obstructions of the liver and kidneys. Boyle [‡] pronounces it a very excellent remedy for vomiting and spitting of blood. Celsus [§] recommended the juice, and Pliny the decoction of the plant, for phthisical persons. Schulz [||] states, that the juice mixed with honey has proved beneficial in phthisis. Lentilius [¶] and

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[*] Mat. Med. lib. ii. c. 153.

[†] De Simpl. lib. vi.

[‡] De Util. Phil. Nat. part ii. p. 150.

[§] De Med. lib. iii. c. 22.

[||] Mat. Med. p. 412.

[¶] Eteodromus, p. 3565.

Chomel, praise the effects of the juice taken to the amount of from two to four ounces in intermittent fevers. Bergius [*] adds his testimony of the febrifuge qualities of the root. He says, "I have tried from three to six drachms of the root in autumnal tertian fevers without effect; but in vernal fevers not infrequently with success." Externally the leaves are commonly applied by country people to recent wounds and sores; they are also used in the form of a poultice to cleanse and heal foul ulcers; fomentations with the decoction are recommended for the same purpose, likewise in prolapsus ani. Gargles have been made with the root and leaves.

The seeds in the dose of a drachm, boiled in milk or broth, are reputed laxative [†], and demulcent. The infusion and decoction of the root and leaves in the proportion of one to two ounces to a pint of water may be taken *ad libitum.* Boyle recommends an electuary, made of fresh comfrey roots, juice of plantain and sugar, as effectual in hœmoptysis, &c. The powdered root [‡] in the dose of four or five drachms, or a strong infusion of the plant (and probably the extract) may be given in agues at the commencement of the fit. According to Needham [§], plantain-juice either alone, or mixed with lemon-juice, is an excellent diuretic.

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[*] Mat. Med. tom. i. p. 10.

[†] Chomel, Usuelles ii. p. 291.

[‡] Wedelius had an amulet which he wore fifty years, and considered a preservation against the plague and all infection. It was composed of the roots of plantain and colchicum, and flowers of lavender. See his *Experimentum curiosum de Colcho veneno*, &c. Jenæ, 1718.

[§] In Raii Hist. Pl. 879.

CL.

POLYPODIUM VULGARE.

Common Polypody.

Class XXIV. CRYPTOGAMIA.—*Order* I. FILICES.

Nat. Ord. FILICES.

GEN. CHAR. *Sori* in small roundish scattered convex spots. *Involucre* none.

SPEC. CHAR. Fronds deeply pinnatifid, segments linear, lanceolate, obtuse, crenulate, contiguous, upper ones gradually smaller. Root-stock chaffy.

SYNONYMES.

Greek	πολυπόδιον.
Latin	Polypodium vulgare. *Bauh. Pin.* 359. Polypodium. *Ger. Em.* 1132. Filicula sive Polypodium. *Cam. Epit.* 993. Polypodium majus et minus. *Dod. Pempt.* 461. Polypodium vulgare. *Lin. Sp. Pl.* 1544. *Eng. Fl.* ii. p. 280. *Eng. Bot. t.* 1149.
French. ..	Polypode; Polypode de chêne.
Italian. ..	Polipodio; Felce quercina.
Spanish ..	Polipodio.
Portuguese	Polipodio.
German ..	Engelsüss; Sussfarren; Tupfelfarren; Steinwurz.
Dutch....	Boomvaren; Engelzoet.
Danish ..	Engelsoedt.
Swedish ..	Stensœta.
Polish ..	Paprotka.

DESCRIPTION.—The rhizoma is creeping, ligneous, horizontal, dark brown externally, greenish internally, covered with reddish membranous scales, and furnished with dark coloured fibres. The fronds are about a foot in length, deeply bipinnatifid, with linear-lanceolate, alternate, parallel, obtuse segments, somewhat crenulate at the margin, gradually decreasing in size upwards, and are supported on a long, cylindrical, smooth footstalk. The fructification consists of small yellowish brown masses, called sori, arranged in a single series on each side the midrib of the leaflets; these groups are sometimes so numerous as to be confluent. The sori are naked, *i. e.* not covered by any tegument or involucre, and consist of numerous capsules or conceptacles; each of which is pedicellate, one-celled, with an articulated ring, opening transversely with elasticity, and ejecting the numerous minute sporules. Plate 38, fig. 1 (*b*) mass of sori removed from the back of the leaf magnified; (*c*) capsule magnified; (*d*) the same opening elastically and discharging the sporules.

Polypody is very common upon old walls, trunks and stumps of trees, shady banks, &c. The fructification is in perfection from June to November.

The name Polypodium is derived from πολυ, *many*, and πους, ποδος, *a foot*, in allusion to the numerous roots, or to the segments of the fronds.

The leaves of this plant are sometimes burnt for the sake of its ashes, which contain a large proportion of carbonate of potash.

Qualities.—The rhizoma, (commonly called the root,) is nearly inodorous; the taste is at first sweetish, becoming bitter, nauseous, and slightly astringent. The aqueous infusion has the flavour of the root, and is of a yellowish colour; the extract is sweet, and scarcely bitter or astringent. The spirituous infusion is much sweeter than the aqueous, but the extract is somewhat acrid *. According to Bucholz, the rhizoma affords saccharine matter, gum, resin, oil, and starch.

Medicinal Properties and Uses.—The slight medicinal virtues of Polypody have been quite obscured by the praises lavished upon it by the ancients. Hippocrates, Theophrastus, Dioscorides, Celsus, and Paulus Egineta attribute to it the power of expelling bile and pituita; consequently it was much used in maniacal melancholic disorders, and in visceral obstructions †. Parkinson recommended it combined with Foxglove as a remedy in Epilepsy (see Foxglove). The Polypodium quercium or that which grows on the oak, was reckoned more especially efficacious, although it differs in no respect from the other kinds. Poissonier and Malouin[*] state, that they found a decoction of the root useful in mania, but other medicines were exhibited at the same time, so that it is doubtful to which the efficacy belongs. Dodonæus[†] recommended it in wandering gout. Some writers consider it useful in rachitis, and others recommend it as vermifuge like the Male Fern.

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* Murray, App. Med. vol. v. p. 450.

† It is the "rheum purging Polypody" of Shakspeare.

The reputed value of Polypody in most of the above mentioned diseases is probably to be attributed solely to its purgative properties, which it possesses only in its recent state, and in large doses. It appears more entitled to the character of a resolvent and demulcent as observed by Murray[‡]. With this view it deserves trial in asthmas, coughs, &c.

The fresh root is given in substance in the dose of a drachm to two drachms, or pulverised and mixed with honey, in the form of an electuary. The aqueous infusion made with two ounces of the root to three pints of water, may be given in the quantity of a cupful several times a day. Liquorice may be added to this infusion when intended for coughs, &c., and gentle boiling will increase its strength, but this must be performed with care, as much coction renders it nauseously bitter. The aqueous extract promises to be an advantageous form of exhibiting Polypody.

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[*] Mem. de l'Acad. des Sciences de Paris, 1751, p. 160.

[†] Pempt. p. 465.

[‡] App. Med. vol. v. p. 452.

CLI.

PAPAVER RHŒAS.

Red or Corn Poppy.

Class, &c. See White Poppy (*Papaver somniferum*).

Spec. Char. Capsules glabrous, sub-globose. Stem many flowered, bristly; the hairs spreading, as are those of the flower-stalk. Leaves pinnatifid.

SYNONYMES.

Greek	ϱοιας.
Latin	Papaver erraticum majus. *Bauh. Pin.* 171. Papaver Rhœas. *Ger. Em.* 371. *Park. Theatr.* 366. Papaver erraticum. *Dod. Pempt.* 444. *Cam. Epit.* 371. Papaver Rhœas. *Lin. Sp. Pl.* 726. *Eng. Fl.* iii. p. 11. *Eng. Bot.* t. 645.
French	Coquelicot; Ponceau; Pavot rouge.
Italian	Papavero salvatico; Papavero erratico; Rosolaccio.
Spanish....	Adormidera silvestre; Amapola; Ababa.
Portuguese.	Papoileira.
German ...	Wilder Mohn; Rother Mohn; Feld Mohn; Klatschrose; Klapper-rose.
Dutch	Klaproozen; Koornroozen; Koornheul; Kankerbloemen.
Danish	Klapperose.
Swedish ...	Kornros.
Polish	Maczek.

Description.—The root is annual, slender, nearly simple, whitish, and furnished with a few fibres. The stem is erect, branched, pale green, from one to two feet high, and clothed as well as the flower-stalks, with horizontally spreading bristly hairs. The leaves are alternate, sessile, pinnatifid, with incised or deeply serrated, lanceolate segments, covered with short hairs. The flowers are large, terminal, showy, drooping previous to expansion. The calyx is composed of two ovate, hairy, concave, caducous sepals. The petals are four, large, roundish, undulated, of a bright deep scarlet colour, and sometimes marked with a black spot at the base. The stamens are very numerous, inserted upon the receptacle ; with capillary, purplish filaments, and oblong dark purple anthers, containing dull greenish pollen. The germen is superior, smooth, destitute of style, and crowned by a large peltate stigma, with eight to ten diverging rays. The capsule is smooth, nearly globose, or urn-shaped, crowned with the persistent dark-coloured stigma ; the seeds attached to parietal placentæ, forming incomplete dissepiments, equal in number to the rays of the stigma, are very numerous, reniform, and escape by pores underneath the stigma. Plate 39, fig. 2, (*a*) stamens and pistil ; (*b*) stamen ; (*c*) capsule of the natural size ; (*d*) the same cut transversely to show the dissepiments.

This beautiful species of Poppy is well known as occurring in almost every corn field, except in certain districts, where *P. dubium* is more plentiful. It flowers in June and July.

The specific name Rhœas, so called from the ροιας of Dioscorides, is supposed to be derived from ρεω, to *fall*, in allusion to the caducous nature of the calyx. It is called provincially *Corn-rose*, *Wind-rose*, *Cup-rose*, *Canker-rose*, and *Head-wark*.

The very nearly allied species, *Papaver dubium*, is distinguished by its oblong capsules, and by the appressed bristles of the flower-stalk. The prickly-headed Poppy (*P. argemone*) is recognized by its clavate, hispid, ribbed capsule, its bipinnatifid leaves, and small narrow scarlet petals.

Many fine varieties of the common Red Poppy are cultivated in gardens, but it is no where a more pleasing object than in its native places of growth, except to the farmer, for

——— " Poppies nodding, mock the hope of toil."—*Crabbe.*

Cowley intimates that Morpheus showers his blessings upon the toiling peasant, in preference to the prince :—

" His Poppy grows among the corn."

Browne says

" Sleep-bringing Poppy, by the plowmen late,
Not without cause, to Ceres consecrate."

Indeed the statues of Ceres are generally adorned with Poppies.

Virgil compares a beautiful youth dying, to a poppy overpowered by rain;—

> "Purpureus veluti cum flos succisus aratro
> Languescit moriens; lassove papavera collo
> Demisêre caput, pluvia cùm fortè gravantur." *
> *Æn. Book* IX. v. 435.

General Uses.—The foliage of this plant, it appears, may be used for culinary purposes. Sibthorpe saw an old woman in Arcadia gather the leaves of wild Poppy with those of dock for her supper. The seeds are used in Poland and some parts of Russia as an ingredient in soups, and to make gruel and porridge. The bright scarlet petals impart their colour to water, and this with the addition of vitriolic acid is stated to dye cloth, linen, silk and cotton of a beautiful deep red shade. It is likewise asserted that the stuffs previously immersed in a solution of bismuth acquire a yellow cast.

Qualities, &c.—The recent flowers have a tolerably strong odour, of the disagreeable narcotic kind, and a mucilaginous slightly bitter taste; they impart their red colour to water and partly to spirit. The aqueous infusion † is blackened by sulphate of iron, and is rendered dark purple by the alkalies. The unripe capsules furnish by incision a yellowish milky juice, resembling genuine opium. Four ounces of the capsules according to Murray ‡, furnish by decoction and evaporation, five drachms of opiaceous extract.

Medicinal Properties and Uses.—This plant, which is retained in the present Materia Medica, only for the sake of the fine colour which the petals impart to an officinal syrup, was in high repute with some of our former writers. In properties the Red Poppy (petal) is slightly sudorific and anodyne; hence it has been recommended in most diseases where these properties are desirable agents. Ettmuller employed it in all active inflammations, in erysipelas, in inflammation of the lungs, liver, spleen, and intestines, but more especially in peripneumony and pleurisy. In obstinate catarrhs and pulmonary affections, the infusion was frequently given by Chomel[*], and he also asserts that the same used in pleurisy, will frequently render the perspiration more abundant. In pleurisy Baglivi[†] likewise speaks highly of an infusion of the flowers, combined with linseed. Of its efficacy in the above complaints we have no native testimony, and judging from its sensible qualities, we should not be disposed to anticipate any very favourable result from its use. To the inspissated juice of the capsule, however, or rather to the extract obtained from the evaporated decoction, we cannot scruple to allow an anodyne property, and although it is not so powerful as opium itself, it is by no means a bad substitute. Fouquet[‡] gave it in pertussis, epilepsy, and other convulsive diseases of children, in doses of from six to eighteen grains, and preferred it to opium as being less stimulating. Chomel also commends it in doses of half a scruple to a scruple, for allaying cough and inducing tranquil sleep, indeed it may be advantageously used in most disorders for which opium is resorted to.

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* See also Homer's Iliad, (Book viii.) from which this simile is borrowed.

† "The infusion prepared in the shops by pouring four and a half pints of boiling water on four pounds of the fresh flowers, is stirred over the fire till the flowers are all immerged, and is then set by to steep for the night: without the application of fire, so as to scald or shrink the flowers a little, they can scarcely be moistened with water; if the heat is continued longer than this effect is produced, the liquor turns out quite slimy. This infusion pressed out and depurated by settling, is reduced by a proper addition of sugar into a deep red syrup."—*Lewis's Mat. Med.* p. 421.

‡ App. Med. vol. ii. p. 252.

INFUSION OF RED POPPY.

Take of fresh Red Poppy petals	one ounce;
Boiling water	one pint.

Infuse for a quarter of an hour, and strain. Dose, from one to four ounces.

SYRUP OF RED POPPY[§].

Take of fresh Red Poppy petals	one pound;
Boiling water	one pint;
Refined sugar	two pounds and a half.

To the water, heated in a water-bath, add gradually the Poppy petals, stirring them frequently; then having removed the vessel, macerate for twelve hours; press out the liquor and set it aside, that the impurities may subside; lastly, add the sugar and dissolve it.—Dose, from one to eight drachms.

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[*] Chomel, Pl. usuell. tom. i. p. 124.

[†] Bagliv. Oper. p. 38.

[‡] Murray App. Med. tom. ii. p. 252.

[§] Pharmacopæia Londinensis, 1836.

CLII.

PAPAVER SOMNIFERUM.

White Poppy.

Class XIII. Polyandria.—*Order* I. Monogynia.

Nat. Ord. Papaveraceæ.

Gen. Char. *Calyx* of two caducous sepals. *Petals* four. *Stigma* sessile, radiated. *Capsule* superior; the seeds on receptacles forming incomplete dissepiments, escaping by pores beneath the permanent stigma.

Spec. Char. Capsule globose, glabrous. Stem glabrous. Leaves amplexicaul, incised.

SYNONYMES.

Greek	μηκων ημερος.
Latin.	Papaver hortense; semine albo (et nigro). *Bauh. Pin.* 160 et 170. Papaver sylvestre. *Ger. Em.* 370. *Raii Syn.* 308. Papaver sativum. *Cam. Epit.* 103. Papaver somniferum. *Lin. Sp. Pl.* 726. *Eng. Fl.* iii. *Eng. Bot.* t. 2145.
French	Pavot; Pavot des jardins; Pavot blanc.
Italian	Papavero domestico.
Spanish. ..	Amapola; Adormidera domestica.
Portuguese.	Papoila.
German. ..	Mohn.
Dutch.	Heul; Tamme Heul; Slaapkruid; Slaapbol.
Danish	Valmue.
Swedish. ..	Wallmog.
Pol. & Russ.	Mak.
Arabic	Khuschkhash.
Persian	Kuknan.
Hind.&San.	Post.
Chinese ...	Ying-suh.
Japan.	Kes.

Description. The root is annual, fusiform, yellowish white, branching, and fibrous. The stem is erect, cylindrical, glaucous green, smooth below, sometimes with a few scattered, expanded hairs towards the summit. The leaves are large, wavy, alternate, sessile, amplexicaul, incised, unequally toothed, glabrous on both sides, and of a pale, glaucous green colour. The flowers are large, terminal, solitary, drooping in the bud. The calyx is composed of two concave, glabrous, caducous sepals. The corolla consists of four large, rounded, white petals, usually marked at the base with a purple eye. The stamens are very numerous, inserted on the receptacle, with setaceous filaments dilated upwards, and oblong, obtuse, compressed, erect anthers. The germen is globose, without a style, crowned by a large radiating stigma, of eight, ten, or more rays, with a thin, deflexed margin. The capsule is globose, or nearly so, large, glabrous, one-celled, divided half way into spurious cells by the incomplete dissepiments to which the seeds are attached, opening at the summit by apertures beneath the stigma. The seeds are very numerous, reniform, small, whitish. Plate 39, fig. 1, (*a*) stamens and pistil; (*b*) single stamen; (*c*) capsule; (*d*) the same cut transversely; (*e*) seed, magnified; (*f*) longitudinal section of the same to shew the embryo.

White Poppy is supposed to have been originally a native of Asia, whence it has been conveyed to the south of Europe and to England, where it is sometimes found apparently wild. It flowers in July.

The Latin name Papaver is thought to be derived from the Celtic *papa*, *pap*, the soft food given to children, in which the seeds were formerly boiled to induce sleep. The plant is denominated μηκων in the Greek writings. Opium is so called from οπος*, *juice*,—the juice, par excellence. Gerard states that the garden poppy is sometimes called *cheese-bowls*.

The poppy appears to have been cultivated many years prior to the era of Hippocrates, most probably for the sake of its edible seeds †, as we find scarcely any mention of its narcotic properties before the time of Heraclides of Tarentum. Some have thought that opium was the *Nepenthes* of Homer[*], the effects of which Helena learned from the Egyptians, but this opinion is controverted by Dr. Christen[†].

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* Hence, also, most of the oriental names of opium. In India, Egypt, and Arabia, it was called *affion*; by the Persians *afiuun*; by the Moors *affiun*, and the modern Turks call it *affioni*.

† Hence Virgil calls it "vescum papaver" and "Cereale papaver,"

Virgil calls it "Lethean poppy."

> —— "Lethæo perfusa papavera somno."
> *Georg.* i. v. 78.

> "Inferias Orphei lethæa papavera mittes."
> *Ibid.* v. *v.* 545.

The poets of our own country make frequent allusions to the somniferous qualities of the poppy. Spenser, describing the plants that grew in the garden of Mammon, says:—

> "There mournful cypress grew in greatest store,
> And trees of bitter gall and heben seed,
> Dead-sleeping poppy, and black hellebore.
> *Faery Queen.*

> —— "Not poppy, nor mandragora,
> Nor all the drowsy syrups of the world,
> Shall ever medicine thee to that sweet sleep
> Which thou owedst yesterday."
> *Shakspeare.*

> "And pale Nymphæa with her clay-cold breath;
> And poppies, which suborn the sleep of death."
> *Harte.*

Products. The seeds, as already mentioned, yield by expression a bland, nutritive oil, with a nutty flavour, and which may be substituted for that of olives or almonds in culinary and other processes. The marc left after expression affords good fodder for cattle, and may be given to poultry. In some parts of Italy and Germany these seeds are made into cakes, &c., after the manner of the ancient Egyptians, Greeks, and Persians, who are said to have mixed them with flour, honey,

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the latter epithet referring to its reputed invention by Ceres, who was sometimes called Mecone, from μηκων. The ancients feigned that it was created by Ceres to assuage her grief for the loss of her daughter.

[*] Odyssey, Book 10, v. 220.

[†] Opium Historice, Chemice, atque Pharmalogicè Investigatum. *Vindobonæ*, 8vo, 1820.

and other substances for culinary use[*]. They are also used by the name of maw-seed, as a cooling food for singing-birds. Linnæus counted 32,000 seeds in one capsule.

The leaves and stem of poppy afford a white opaque narcotic juice, which is very abundant in the capsules; these are consequently the officinal parts of the plant. They are gathered as they ripen[†], and are brought to market in bags, each containing about 3000 capsules, the average price of which is £4 10*s*. The London market is chiefly supplied from Mitcham in Surrey.

Opium is the juice obtained by incisions made in the capsules of the poppy, inspissated in the open air. This operation is performed upon the unripe capsules. In the East, the plants are allowed to grow six or eight inches from each other, and are plentifully supplied with water till they are six or eight inches high, when a rich manure is applied. When the capsules are a little more than half ripe, they begin to collect the opium, by making at sun-set two or three longitudinal incisions from below upwards, without penetrating the interior cavity. The night-dews favour the exudation of the juice, which is collected in the morning with a small iron scoop and deposited in an earthen pot, where it is worked by wooden spatulas in the sunshine until it obtains a proper consistence. This process is repeated every second day as long as any juice will exude, and the capsules are then allowed to ripen. The whole of the collections are lastly formed into cakes, which are covered with poppy or tobacco leaves.

Opium[‡] is brought to this country in chests from Turkey and India. The Turkey or Persian opium, which is the best kind, is found in the market in flattish cakes, sprinkled with dried leaves and the capsules of some species of *Rumex*. Foreign opium contains many impurities and is extensively adulterated.

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[*] "Spargens humida mella soporiferumque papaver."
Virg. Æn. iv. *v.* 486.
——— "Sardo cum melle papaver."
Hor. de Arte Poet. v. 375.

[†] The capsules contain more of the proper juice before they are ripe, it would therefore be desirable to gather them while yet green.

[‡] The average annual importation of opium into Great Britain exceeds 40,000 pounds, and the consumption is upwards of 16,500 pounds.

"Opium should be of a rich brown colour, a tough consistency, and a tolerably smooth and uniform texture. Its peculiar narcotic smell should be strong and fresh, and unaccompanied by any burnt odour. Its taste is nauseously bitter, and slightly warm and acrid. Those pieces which are very soft, full of herbaceous impurities, containing patches of a very dark brown or black extract, and of an empyreumatic odour, are in general adulterated; and it is not uncommon to find bullets concealed in masses even of the best opium. When good opium is carefully dried, it becomes brittle, and affords a yellow-brown powder. It burns with flame, and exhales an odour in which may be traced some resemblance to that of animal matter."*

INDIGENOUS OPIUM.—The White Poppy has been cultivated with great success in England, for the purpose of obtaining opium. Messrs. Cowley and Staines in 1823, collected 196 lbs. of opium, which sold for 30*s.* 6*d.* per lb., from little more than twelve acres of land. Mr. Young has received the Gold Isis medal from the Society for the Encouragement of Arts, (see Edinburgh Philosophical Journal, vol. i. p. 258,) for his improved method of cultivating opium in Britain. The following is that gentleman's mode of procedure ;—

"In 1818, I selected a piece of ground in the highest state of cultivation, well manured with horse-dung, in which I planted early potatoes, in rows four feet wide. Furrows were first drawn ; in these furrows the dung was laid; then the sets were dropped on the dung about nine inches asunder, and covered with the hoe. The potatoes were planted in the middle of April; and at the same time the poppy seeds were sown on the middle space between the potato rows, two rows of poppies on each space, and twelve inches between the rows. When the poppy-plants were about two inches high, they were at first thinned out by the hoe, and afterwards by the fingers, to the distance of eight inches between the plants. Although the potatoes will be ready for immediate use before the gathering of opium commences, the whole crop will not be entirely ripe for lifting till after the opium is collected.

"The distance between the poppy-plants being wide, they produced four full grown capsules each, and some of them seven or eight capsules. As my poppies were sown about the middle of April, they were ready for bleeding about the middle of July. For making the incisions, I use a double-bladed, convex-edged knife, having all the blade covered with sealing-wax, except so much of the cutting-edge as is sufficient for wounding the external rind of the capsule, without penetrating its cavity, and with which

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* Brande's Manual of Pharmacy, ed. 3, p. 155.

I make one or more double incisions according to the size of the head, at first longitudinally, and afterwards obliquely upwards from the stalk. This operation commences about a week after the flowers fall, when the capsules discover to the pressure a proper degree of hardness. When the capsule is sufficiently scarified in the manner described, I then cut off with a sharp scalpel, the capitulum or stigma, with a thin slice of the external rind round it, and by this last incision I obtain more juice than from a scarification upon the side of the head.

" For collecting the juice from the capsules, I used a small common hair brush, known to painters by the name of a sash-tool. When the brush is sufficiently charged with juice, I scrape it off upon the edge of a tin flask fastened to the breast of the gatherer, and capable of holding more than a day's gathering. The gatherers follow the bleeders immediately. One bleeder will occupy two, and if very expert three gatherers ; and they may collect the opium at the rate of two drachms in an hour. The juice is afterwards formed into cakes, or balls, by spontaneous evaporation, in shallow earthen dishes, placed in a close room, stirring it occasionally during the evaporation of its watery part ; to be afterwards kept in bladders.

" The operation of gathering cannot be repeated with advantage oftener than three times a week, upon the same capsules. One acre will keep twelve gatherers and six cutters constantly employed. That number can only gather a third part of an acre in one day, and by the time they have gone through the crop, the capsules at that place where they began will be ready for the operation being repeated. So that when the milky juice ceases to flow, five operations, as already described, will have been made upon each capsule. Supposing twelve gatherers to work ten hours in the day, and that each gathers as much juice as will make two and half ounces of solid opium, in thirty days they will gather fifty-six pounds of opium from one acre. One acre of poppies cultivated according to my method, will yield 1000 lbs. of seed, which afford by expression 375 lbs. of oil."

Mr. Young's calculation of the expense and profit is as follows :—

	£	s.	d.
56 lbs. of opium at 36*s.* per lb.	100	16	0
36 bolls of early potatoes, at 24*s.*	43	4	0
250 lbs. of oil, cold drawn, at 1*s.* 6*d.*	18	15	0
125 ditto warm, at 6*d.*	3	2	6
500 oil-cakes, at 18*s.* per 100	4	10	0
	170	7	6
Expenses............	60	0	0
Profit	£110	7	6

Supposing this to be over-rated by one-third, it is not a bad return. The coldness and variableness of this climate, however, is a great drawback to the extensive cultivation of this plant for opium. English opium is very rich in *morphia ;* Mr. Brande observes "from a carefully prepared sample of English opium, I procured rather a larger quantity of morphia than from the same weight of Turkey opium."

Opium may also be obtained in the form of an extract from the evaporated decoction of poppy capsules, but it is weaker than pure opium. M. Magendie gives a mode of preparing indigenous morphine from this extract [*].

QUALITIES —"Turkey opium when soft is tenacious ; but when long exposed to the air, it becomes hard, and breaks with a uniform shining fracture. Its specific gravity is 1.336. It is inflammable, and partially soluble in water, vinegar, lemon-juice, wine, alcohol, and ether. When carefully triturated with hot water, about five parts in twelve of the opium are dissolved and retained in solution, nearly six parts are simply suspended, and rather more than one part remains perfectly insoluble, of a viscid plastic nature, somewhat resembling the gluten of wheat, but of a dark colour. Bucholz regarded this as caoutchouc." [†] "The aqueous solution is transparent when filtered, reddens litmus paper, is precipitated by the carbonates of potassa and soda, and by pure ammonia ; also by solutions of the muriate and nitrate of mercury, subacetate of lead, nitrate of silver, and the sulphates of copper, zinc, and iron. It is also precipitated by infusion of galls, and by all astringent vegetable infusions." [‡]

The analysis of opium has much occupied the attention of chemists. Their researches have made us acquainted with the existence of a peculiar salifiable base in opium, which has been denominated *Morphia* [§], and to which its sedative and narcotic powers are in great part attributable. It also contains another principle, named *Narcotine*, upon which its exciting effects are said to depend ; *codeine*, another crystallizable substance, having narcotic properties ; *narceine*, *meconine*, *meconic acid*, *oil*, *gum*, *resin*, *fæcula*, *caoutchouc*, *lignin*, and sulphate of *lime* and *potassa :* to which may be added a distinct substance more recently discovered, *paramorphia* or *thebaia*.

POISONOUS PROPERTIES. According to Orfila, opium is most energetic when directly introduced into the blood; and more potent when applied to a wound than when taken into the stomach. The effects of opium are exerted chiefly on the brain and nervous system. On animals in general it produces much more of convulsion and excitement than it does upon man.

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[*] See Magendie's Formulary, translated by Gregory, 1835, p. 21.

[†] Thomson's Dispensatory, ed. 8. p. 482.

[‡] Ibid. l. c.

[§] For the various modes of obtaining *morphia* and the other constituents of opium, with their properties, we must refer to the works already quoted, also to the Quarterly Journal of Science, *May*, 1830, Annales de Chimie, vol. xlv.—Annales de Chimie et Phys. vol. v., &c., &c.

"The effect of a small dose is at first stimulating; the action of the heart and arteries is increased, and a slight sense of fullness is caused in the head. This stimulus in most persons is very slight; but by repeating small doses frequently, it may be kept up for a considerable time in some people. In this way are produced the remarkable effects said to be experienced by opium-eaters *. These effects are described as always in the first instance stimulant, the imagination being rendered brilliant, the passions exalted, and the muscular force increased; and this state endures for a considerable time before the usual stage of collapse supervenes."

The *abuse* of opium will very properly come under this part of our subject. The habitual employment of this drug by the inhabitants of the East is notorious, and it is too frequently resorted to for the purpose of exhilarating the spirits, by many, particularly females, in this country. The "Confessions of an English Opium-eater" contains a vivid description of its effects. But however baneful the consequences, so enchanting are the temporary sensations, that the infatuated victim is miserable without his ordinary stimulus, although its effects, when long continued, are at first obstinate costiveness, succeeded by diarrhœa, flatulence, and loss of appetite, and eventually by impaired vigour both of mind and body†.

"The symptoms of poisoning with opium, when it is administered at once in a dangerous dose, begin with giddiness and stupor, generally without any previous stimulus. The stupor rapidly increasing, the person soon becomes motionless and insensible to external impressions; he breathes very slowly, generally lies quite still, with the eyes shut and the pupils contracted; and the whole expression of the countenance is that of deep and perfect repose. As the poisoning advances, the features become ghastly, the pulse feeble and imperceptible, the muscles excessively relaxed, and unless assistance is speedily procured, death ensues. If the person recovers, the sopor is succeeded by prolonged sleep, which commonly ends in twenty-four or thirty-six hours, and is followed by nausea, vomiting, giddiness, and loathing of food."

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* The Turks take it in graduated doses of from 10 to 100 grains in a day. They have it mixed with rich syrup and the inspissated juices of fruit, to render it more palateable. It is taken in a spoon, or made up into small lozenges mixed with spices, and stamped with *Masch Allah*, signifying "the gift of God." There are to be found opium-eaters who will swallow in a glass of water 100 grains. (*Hobhouse's Journey*, vol. ii. p. 945.) It is esteemed a useful means of preventing exhaustion. The Tartar couriers, who travel great distances, and with amazing rapidity, take nothing else to support them during their journeys. (*Dallaway's Constantinople*, 4to, p. 78.)

† The Turks, Persians, Chinese, and others, regard opium as aphrodisiac,—"Ad venerem enim ciere integræ nationes norunt, et in hunc usum adhibent? (*Saar. Itinerar. Ind. orient.*—*Cleyer*, *Eph. N. C.* ii. 10. 35.) Fœminas Turcias opio viros incitare refert Jahn. (*Mat. Med.* ii. 265.)—Sir A. Cooper and others are of a contrary opinion, judging from individual cases. Most probably, although it acts as a temporary incentive, its ultimate effect is "frangere venereum stimulum."

"The dose of opium requisite to cause death has not been determined. Lassus relates an instance of death from thirty-six grains, and Wilderg has related in his Practical Manual a fatal case caused by little more than half an ounce of the tincture. Very young children are often peculiarly sensible to the poisonous action of opium, so that it is scarcely possible to use the most insignificant doses with safety*. Dr. Alison has met with a case where an infant a few weeks old died after taking *four drops of laudanum*, and he has repeatedly seen unpleasantly deep sleep induced by only two drops."†

MORBID APPEARANCES. Turgescence of the vessels in the brain and watery effusion into the ventricles and on the surface of the brain are generally met with. The lungs are often gorged with blood. The stomach is occasionally red, but very seldom inflamed. Lividity of the skin is generally present, and is sometimes excessive. The blood is generally very fluid. The poisoned body is usually decomposed in a very short period.

TREATMENT. The first object is to remove the poison from the stomach, either by the stomach pump, or by the exhibition of emetics. Sulphate of zinc, in the dose of twenty or thirty grains dissolved in water, is the best emetic, repeated after a short interval if the first dose produce no effect. Tickling the fauces with a feather, and draughts of mustard and water, are also beneficial. To ensure the action of the emetic, the patient should be roused as much as possible; this may be done by obliging him to walk incessantly, by loud speaking, tickling the nostrils, the injection of water into the ear, the affusion of cold water upon the head, &c. To sustain the powers of the system, warm brandy and water, ammonia, ether, aromatic confection, or other cordials, may be usefully employed. The exhibition of the vegetable acids diluted with water, and infusion of coffee is beneficial, when the poison is removed from the stomach; prior to this acids are injurious by accelerating the solution of the opium. Orfila suggests that the decoction of galls may be used as an imperfect antidote till the poison can be evacuated from the stomach. Bleeding is improper until the opium is ejected. The warm bath is efficacious when there is complete insensibility, coldness of the extremities, feeble pulse, or livid hue of the countenance.

MEDICINAL PROPERTIES AND USES.—Although the poppy appears to have been cultivated long before the age of Hippocrates, it does not appear that he was accustomed to exhibit opium in the treatment of diseases, nevertheless its use can be clearly traced back to Diagoras, who was nearly his contemporary, and its importance has ever since been gradually advanced by succeeding physicians of different nations *. To enter circumstantially into the patronage which it received at the hands of many able foreigners we do not deem requisite, but suffice it to say, that its extensive practical utility was not known in this country until the time of Sydenham. Since that period it has continued to be the most popular as well as the most powerful narcotic used in medicine.

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* The "syrup of poppies" should therefore be cautiously given to children, as it is not unfrequently made with a certain quantity of opium mixed with a decoction of poppy heads and sugar.

† Christison on Poisons, p. 658.

The *modus operandi* of opium has been a favourite subject of controversy, but without entering into the merits of the different theories, we shall content ourselves by first giving a plain statement of its action on the human frame, and then pass to a few general remarks on some of the many diseases in which it is reputed beneficial or hurtful.

When taken in small doses opium augments the action of the stomach and heart, renders the pulse stronger, full, and more frequent, increases the general heat of the body, renders cutaneous transpiration more abundant, and respiration more active, produces an elevation of the mind, even to intoxication and delirium, and the different functions of the mind and body are invigorated. To these exciting effects, however, symptoms of a contrary nature soon supervene, the circulation becomes less active, languor and drowsiness come on, sensibility to external impressions is impaired, the sense of pain is lost, and sleep ultimately induced; the skin becomes moist and warm, all the secretions are decreased, except perspiration and the flow of milk, which are increased;—indeed, the stimulating operation of opium generally continues about an hour, while the sedative effects usually last six or eight hours. Such are the primitive and secondary effects of this medicine; but whether the sedative effects are the result of the previous excitation, we shall leave for disputants to determine.

From the power which this valuable drug possesses of relieving pain and allaying inordinate restlessness, it has naturally been employed in a variety of diseases. In some diseases of debility opium is very efficacious. In fevers both continued and remittent, it is admissible when they are free from inflammatory and bilious symptoms. In typhoid fevers[*] when given in small doses frequently repeated, it is a useful assistant to wine and tonics in supporting the powers of life, and at the same time in allaying irritation and blunting the susceptibility of those morbid impressions which occasion watchfulness, delirium, tremors and subsultus tendinum. But in those cases of typhoid fever that are accompanied with a hot and dry skin, or where there is a tendency to local inflammation, its exhibition is highly improper.

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* Woodville's Medical Botany, vol. ii. p. 380.

Opium was formerly much used in intermittents[†], but it has now almost entirely given place to the more specific febrifuge properties of bark and quinine; nevertheless, it is a valuable remedy for arresting or ameliorating the paroxysms of these disorders, for which purpose it may be given either before the fit, in the cold stage, in the hot stage, or during the interval. Paracelsus, Horstius, Ettmuller, Wedel, and others, speak very confidently of its efficacy when taken a little before the paroxysm; and Berryat[‡], who is a strenuous advocate for opium in intermittents, recommends it in combination with Centaury. Probably, the more effectual plan of combating some of these obstinate cases is, to unite it with bark or quinine, particularly when the latter remedies are disposed to run off by the bowels.

As opium accelerates circulation it is not ordinarily useful in inflammatory diseases, and Dr. Young[§] went so far as to advance a rule "that opium is improper in all cases where bleeding is necessary," a maxim, however, which has been subsequently ably disputed by others[||]. Opium should not be employed in inflammation of the bowels, but when the inflammatory symptoms have been subdued, it will often prove useful by suspending painful intestinal contractions. Sydenham and others recommended it, particularly in combination with emollients in dysentery, for allaying tenesmus, and for stopping the too frequent contractions of the bowels, but in no case does he recommend its exhibition when inflammatory indications are present. In cholera it is a frequent remedy, and in the form of laudanum not unfrequently administered to arrest nausea and vomiting.

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[*] On its use in these cases consult Campbell's Observations on Typhus; Wall's Observations on the Use of Opium in low fevers; Gland in Journ. de Med. 1789, Juin; Hufeland Annalen der franz. Arzneykunde, vol. i. p. 103, &c.

[†] V. Schulz. Diss. de intermitt. cur. antiquis.

[‡] Mémoires presentés à l'Acad. Roy. de Sc., 1755, tom. ii. p. 254.

[§] Treatise on Opium, sect. 39.

[||] Vide Remmett Diss. de Opii Usu in Morbis Inflamm. 1774.—Wirtensohn Diss. Opium vires fibrarum, &c., p. 32.—Triller Diss. de suspecta Opii ope in pleuritide, p. 4.—De Haen, Rat. Med. pt. i. p. 24.—Richter Anfangsgründe der Wundarzneykunst, vol. i. p. 25, &c.

As a diaphoretic it has been highly commended in some exanthematous diseases, especially small pox, its utility in which is attested by Sydenham, Morton, Wedel, Boerhaave, Freind, Huxham, Van Swieten, and many other celebrated members of the profession. For the harassing cough and symptomatic diarrhœa accompanying measles, it is likewise an approved remedy, but, as a matter of course, its use must be regulated entirely by the symptoms which manifest themselves.

Of its efficacy in ameliorating nervous affections and of allaying pain, whether general or local,—of its pacifying powers in hysteria, hypochondriasis, melancholy and mania,—or of its anodyne influence over spasmodic, convulsive, and epileptic diseases,—it is unnecessary to speak: in each and several of these disorders it has been essayed and approved by those on whose judgment and veracity we may rely.

Lastly, from the powerful influence which opium possesses over the pain attendant on organic diseases, its use is rendered indispensable in pulmonary phthisis, cancer, inveterate syphilis, scrofulous caries, and the like,—affections, the progress of which no human art can prevent, and for which no other remedy yields equal palliative relief to the suffering patient.

The ordinary dose of opium is from a quarter of a grain to two grains, but it is to be borne in mind that habit modifies its action. It is also remarkable, that the same who can bear a large dose while labouring under intense pain, will be violently affected, and even be deprived of life, with the same quantity when taken in health. *Morphia* should be commenced with doses of $\frac{1}{8}$ grain, and gradually increased to $\frac{1}{4}$ grain or more.

The seeds of the White Poppy, as already observed, are of a demulcent nature, and do not possess in the slightest degree any of the narcotic properties of opium. They are occasionally employed in emulsions, either alone or with almonds, for assuaging the pain and irritation of the urinary organs in nephritic complaints, in strangury and in calculous affections. The dried capsules or seed-vessels are used for preparing a syrup, but more extensively, either alone or with chamomile flowers, as an anodyne fomentation.

LAUDANUM[*].

Take of hard Opium, powdered	three ounces.
Proof spirit	two pints.

Macerate for fourteen days and strain.—Preferable to opium in substance for sudden and extreme pain, &c. Dose, from ten to forty drops; nineteen drops containing one grain of opium.

PAREGORIC ELIXIR[†].

Take of hard Opium, powdered	seventy-two grains.
Camphor	two scruples and a half.
Benzoic acid	seventy-two grains.
Oil of aniseed	one drachm.
Proof spirit	two pints.

Macerate for fourteen days and strain.—Suited to tickling coughs, hooping cough, chronic asthma, &c. Dose, from one drachm to one ounce; an ounce containing nearly two grains of opium.

POPPY FOMENTATION[‡].

Take of Poppy heads, sliced	four ounces.
Water	four pints.

Boil for a quarter of an hour and strain. Two ounces of chamomile flowers may be advantageously added to the above. Useful in all cases of painful swellings, and simple excoriations.

SYRUP OF POPPY[§].

Take of Poppy heads, sliced	three pounds.
Sugar	five pounds.
Boiling water	five gallons.

Boil down the Poppy heads in the water to two gallons, and press out the liquor. Boil down the liquor again to four pints, and strain it while hot; set it by for twelve hours that the dregs may subside; pour off the clear liquor, and boil it down to two pints; then add the sugar and dissolve it.—Chiefly used as an anodyne for children. Dose, for an adult, from two drachms to an ounce.

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[*] Tinctura Opii. *Pharm. Lond.*

[†] Tinctura Camphoræ composita. *Pharm. Lond.*

[‡] Decoctum Papaveris. *Pharm. Lond.*

[§] Syrupus Papaveris. *Pharm. Lond.*

CLIII.

ONONIS ARVENSIS.

Common Rest-harrow.

Class XVII. Diadelphia.—*Order* III. Decandria.

Nat. Ord. Leguminosæ.

Gen. Char. *Calyx* campanulate, five-cleft, with linear segments. *Standard* large, striated. *Legume* turgid, sessile, few-seeded.

Spec. Char. Stem hairy. Branches spinous or unarmed. Leaves ternate, below, the rest simple, cuneate-elliptic. Flowers usually solitary.

SYNONYMES.

Greek....	ονωνις ; ανωνις.
Latin	Ononis purpurea sine spinis. *Bauh. J.* ii. 394.
	Anonis non spinosa purpurea. *Raii Syn.* 332.
	Ononis, sive Resta bovis. *Bauh. Pin.* 389. *Ger. Em.* 1322.
	β Anonis aut O. spinosa, flore purpureo. *Park. Theatr.* 994.
	Anonis spinosa flore purpureo. *Raii Syn.* 332 ; *Hist.* 957.
	Anonis arvensis. *Lin. Sp. Pl.* 1006. *Engl. Fl.* iii. p. 267.
French...	Arrete-bœuf ; Bugrane ; Bugrande ; Bugrave.
Italian...	Ononide ; Anonide ; Bulimaca ; Resta d'aratro.
Spanish ..	Detienebuey ; Remora de arado.
Port.	Restaboy.
German ..	Hauhechel ; Ochsenbrech ; Stallkraut.
Dutch....	Prangwortel ; Stalkruid ; Ossenbrecke.

Description. The root is perennial, very strong and woody, creeping, often a foot or more in length, and varying in size from the thickness of a quill to that of the finger ; it is brown externally, whitish within. The stems are annual, round, woody, branched, leafy, erect or procumbent, more or less hairy, purplish ; the branches in a barren soil and on an old root terminating in a sharp thorn. The leaves are alternate, deep green, elliptical or ovate, somewhat cuneate at the base, petiolate, rather rough with hairs, furrowed, the lower ones ternate; at the base of each petiole is seated a pair of united amplexicaul stipulæ. The flowers are large, axillary, solitary, rarely twin, supported on short peduncles, and are of an elegant rose colour, sometimes white. The calyx is campanulate, hairy, deeply divided into five linear ribbed segments. The corolla presents a broad striated standard, twice as large as the other petals, two oblong wings, and a pointed keel. The stamens are ten, with the filaments united below, the uppermost separable from the rest. The germen is superior, small, ovate, greenish, supporting a slender, glabrous, permanent style, tipped with a simple minute stigma. The fruit is a small, oval, or rhomboid, turgid legume, scarcely longer than the permanent calyx, containing a few reniform tuberculated seeds. Plate 38, fig. 2, (*a*) calyx; (*b*) standard; (*c*) wing; (*d*) keel; (*e*) stamens and pistil; (*f*) pistil; (*g*) fruit; (*h*) seed, magnified.

This plant is a native of Europe, and is frequent in this country in barren fields and by way sides, either in a sandy, gravelly, or calcareous soil. It flowers from June to August.

The generic name is derived from ονος, an *ass*, and ονημι, to *delight*, because the foliage is said to be grateful to asses. Theophrastus * writes it ονωνις, but Dioscorides † changes the orthography to ανωνις. It has been called in Latin *remora aratri*, *resta bovis;* in French *arrete-bœuf;* in English *rest-harrow*, and by synonymous terms in other languages, in reference to its strong, creeping, tangled roots, which retard the operations of the ploughman. Other provincial names of this species are Cammock, Petty Whin, and Ground Furze.

There are two or three varieties of Ononis, having very distinct and prominent characters. At least, so they are generally considered, while some botanists assign them a specific rank. The unarmed Rest-harrow is procumbent, with ascending floriferous branches, and cuneate-elliptic leaves, retuse and serrulated at the apex; to this probably may be referred the *O. inermis*, *O. repens*, and *O. procurrens;* while the spiny Rest-harrow (*O. spinosa*) may be considered merely a degenerate kind, in which, from sterility of soil or in consequence of age, the secondary branches are incompletely developed in the form of *spines*. In fact, the two varieties are sometimes found within a short distance of each other, on the same heath or common, evidently modified by the soil. The *O. spinosa* may be brought back to its normal state by cultivation. That the plant should produce thorns in a barren soil appears a wise provision of nature, as it would otherwise be cropped short by cattle, and thus prevented from propagating the species.

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* Hist. lib. vi. c. 4 et 5.

† Mat. Med. lib. iii. c. 21.

Qualities and General Uses. Rest-harrow, though commonly regarded as a troublesome weed, is, on the authority of most authors, much relished by asses, and is eaten by oxen, goats, and sometimes by sheep, though refused by horses and swine. The peasantry in some countries eat the young shoots as a salad, or boil them with other pot-herbs. It has been used many ages ago as a culinary vegetable, for we find Dioscorides speaking of the shoots as an agreeable pickle.

The foliage is somewhat viscid to the touch, and has a strong, peculiar, rather disagreeable smell. The root has a similar odour, and a sweetish leguminous sub-viscid taste, resembling the flavour of a ripe pea or that of liquorice. The infusion of the fresh root exhibits similar qualities; when boiled, it contracts an ungrateful flavour and considerable bitterness, but exhibits no trace of astringent matter. Spirit also extracts its active matter, which resides principally in the cortical part.

Medicinal Properties and Uses. Rest-harrow, though now disregarded, was much employed and highly commended by the practitioners of the olden time. Dioscorides [*] and Galen [†] highly extol its diuretic and lithontriptic qualities. Lentilius [‡] affirms that a decoction of the root in wine administered in a case of dysuria not only fulfilled the curative indication, but induced an incontinence of urine. Simon Pauli [§] speaks of it as an incomparable remedy in calculus of the kidneys or bladder; " to which eulogy," says Murray, " though I cannot assent, I do not doubt that the Rest-harrow may, by expelling the sand, mitigate the pain arising from calculus." Moreover, several of the old writers mention its excellent effects in sarco-

[*] Mat. Med. lib. iii. c. 21.

[†] De Simpl. lib. viii.

[‡] Miscell. Medico-pract. p. 277.

[§] Quadrip. p. 224.

cele. Matthiolus[*] asserts that he has known a cure of sarcocele effected by the persevering use of the powdered root. Pfisterus[†] relates that the issue of his experience of it was, 1st, that it does not always act as a diuretic; 2dly, that in some patients it induced anorexia and cardialgia; 3dly, that he had never observed it to be efficacious in genuine sarcocele. Hence it has been supposed that the cases adduced by Matthiolus, Ettmuller, and others were in fact hydrocele, which had been mistaken for sarcocele. The testimony of the learned Bergius[‡] as to the remedial efficacy of this plant in the above-mentioned diseases is valuable: he says, "I have often known a decoction of the root of Ononis afford astonishing relief in ischuria from calculus of the bladder, when other remedies had proved abortive. I have seen a drachm of the root taken twice a day for some weeks, effect a notable diminution, and at length the complete resolution of sarcocele in an aged individual. Acrel has observed the same in three cases of hydrosarcocele; in one of these, the tumour, although sub-opaque, was more analogous to hydrocele." Plenck[§] and Schneider[||] give their testimony to the same effect. Although modern surgeons may place but little faith in these statements, such a remedy at least deserves trial prior to the use of the trochar, &c.

Further, Meyer[¶] and Gilibert recommend the Rest-harrow in visceral and glandular obstructions, the atrophy and cachexia of infants, and in chlorosis. The distilled water was formerly employed against internal hæmorrhages; the decoction has been used with success, with the addition of a little vinegar, as a gargle in looseness of the gums, scorbutic ulcers, and tooth-ache. In Hungary they use a vinous decoction of the plant, to which is added an onion and a few cloves, as a fomentation to the head, in the delirium of malignant fever.

The root, or what is preferable, merely its bark is given powdered, in the dose of a drachm, or in that of three or four drachms in the form of decoction to a pint of water, or digested in an equal quantity of wine. Ettmuller highly extols what he calls the "*essence*," prepared by digesting the whole plant, while in flower, in rectified spirit for several days, then distilling and adding to the distilled fluid a fresh quantity of the plant, together with the alkaline salt obtained from its ashes; macerating the whole again for several days, and then straining and expressing the clear liquid. He considers this in the dose of half an ounce to two ounces, a specific in calculous diseases. The herbaceous part of the plant is less frequently used; it may be employed however by boiling a small handful in half a pint of water, over a moderate fire, till nearly one half is consumed, which dose is to be repeated every morning.

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[*] Comment. p. 560.

[†] De Hydrosarcole, § 50.

[‡] Mat. Med. tom. ii. p. 600.

[§] Pharmacol. chirurg. p. 352.

[||] Chirurgische Geschichte, vol. x.

[¶] Vide Richt. Bibl. vol. viii. p. 275.

CLIV.

ROSA CANINA.

Common Dog Rose.

Class XII. ICOSANDRIA.—*Order* III. POLYGYNIA.

Nat. Ord. ROSACEÆ.

GEN. CHAR. *Calyx* with the tube contracted at the mouth, and with a five-parted limb. *Petals* five. *Pericarps,* or *carpels,* numerous, bony, inserted on the inside of the tube of the calyx.

SPEC. CHAR. Prickles strong, hooked. Leaflets simply serrated, smooth, their disk eglandulose. Calyx segments pinnate. Fruit ovate, nearly smooth.

SYNONYMES.

Greek	κυνοροδον; κυνοσβατος; κυνοσβατον.
Latin	Rosa sylvestris vulgaris, flore odorato, incarnato. *Bauh. Pin.* 483. *Tourn Paris,* 527. Rosa canina inodora. *Ger. Em.* 1270. Rosa sylvestris inodora, sive canina. *Park. Theatr.* 1017. *Raii Hist.* 1470; *Syn.* 454. Rosa canina. *Lin. Sp. Pl.* 704. *Eng. Fl.* ii. p. 392. *Eng. Bot.* t. 992, and *Suppl.* t. 2595. *Lindl. Ros.* p. 98.
French	Rosier des chiens; Eglantier; Rosier des haies; Rosier sauvage.
Italian	Rosa canina; Rosa selvatica; Cinosbata.
Spanish....	Escaramujo; Gravanzo; Rosa silvestre; Rosal canina.
Portuguese.	Rosa brava.
German....	Hundsrose; Wilde Rose; Hagebutten.
Dutch....	Hondsroos; Wilde Roozeborm.
Danish....	Hybentorn.
Swedish ...	Niupon.
Polish	Rosa pulna.

Description.—Common Dog-Rose is a straggling shrub, varying from six to ten feet in height. The stems are diffuse, much branched, glabrous ; the branches of a light green colour often tinged with red, armed with strong, scattered, hooked, compressed prickles, considerably dilated at the base. The leaves are distant, composed of five to seven ovate or oblong, flat or concave, acute or rounded, subsessile leaflets, with acute, unequal, sometimes compound serratures, which are destitute of glands ; the petioles are furnished with a few small-hooked prickles, and with bifid, acute, somewhat reflexed stipulæ at the base. The flowers are sometimes solitary, sometimes forming cymes ; peduncles smooth, with two opposite ovate-lanceolate, acute, rather concave, finely toothed bracteæ, glandular at the edge. The calyx has a smooth, ovate, or somewhat elliptical tube, and a five-parted limb, the divisions pinnate, spreading, sharp-pointed, and deciduous. The corolla is composed of five obcordate concave petals, of a delicate pink colour, whitish at the base, and of a fragrant odour. The stamens are numerous, with spreading setaceous filaments inserted into the calyx ; the anthers, yellow, innate, two-celled. The disk is very thick and elevated. The germens are numerous (twenty to thirty), oblong, rather woolly, included in the tube of the calyx ; styles included or a little exserted, nearly smooth, crowned with turbinate, truncate stigmas. The fruit is ovate or oblong, scarlet, shining, formed by the enlarged fleshy tube of the calyx, and enclosing the pericarps. The pericarps or carpels * are somewhat ovate, uneven, bony, whitish, bristly, indehiscent, one-seeded. Plate 38, fig. 3, (*a*) longitudinal section of the calyx, shewing the pistils and stamens ; (*b*) fruit ; (*c*) pericarp, isolated.

This species of Rose, so deservedly prized for the simple beauty and elegant perfume of its flowers, is frequent in almost every hedge and thicket. It is native throughout Europe and the north of Africa. The flowers appear in June and July, and the fruit ripens at the beginning of winter.

The generic name is derived from the Celtic *Rhos* (from *rhodd, red*) ; the origin most probably of the Greek ροδον, and of the European synonymes of the plant. This species is called by Pliny † *cynorrhodon*, from κυνη, *a dog*, ροδον, *a rose ;* in allusion to the reputed effects of the root in curing the bite of a mad dog; hence the common English name. The shrub is also known by the name of *Common Briar*, and in some parts *Canker Rose;* and the fruit is termed *hips*, or *heps.*

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* Commonly called "seeds."

† Hist. lib. viii. cap. 41.

The common Wild Rose is the Eglantine of some writers, although this appellation more correctly belongs to the Sweet-Briar. Chaucer has a word in praise of it,—

> " As swete as is the bramble floure
> That bereth the red hepe."

Shakspeare mentions its flowers by the name of *canker-blooms.* He is certainly wrong in affirming that they yield "no odour after death;" the water distilled from them is esteemed by some superior to the common rose-water; and there are perhaps not a few who prefer the chaste and elegant fragrance of the wild rose, to the richer and heavier perfume of her courtly sister.

> " The rose looks fair, but fairer we it deem
> For that sweet odour which doth in it live.
> The canker-blooms have full as deep a dye
> As the perfumed tincture of the roses,
> Hang on such thorns, and play as wantonly,
> When summers' breath their masked buds discloses.
> But for their virtue only is their show,
> They live unmoved, and unrespected fade:
> Die to themselves;—sweet roses do not so:—
> Of their sweet deaths are sweetest odours made."

It seems that poets must endeavour to heighten the praise of one object, by disparaging another. The very name *Canker-Rose*, is a term of reproach and inferiority:—

> " To put down Richard, that sweet lovely rose,
> And plant this thorn, this *canker*, Bolingbroke."

QUALITIES AND GENERAL USES.—The petals of the Dog-Rose fresh gathered and distilled afford a fragrant perfumed water. The dried leaves have been particularly recommended as a substitute for foreign tea. They impart to water by infusion a fine colour, a sub-astringent taste, and a slightly aromatic odour. Gleiditsch states, that the green leaves of this and other species of rose are useful in currying fine leather. The bark of the stems according to Sieffert, imparts to wool a dark brown colour, which may be fixed by the usual methods; and on adding a solution of alum to the dye, it becomes of a fine blue colour. He observes, however, that these colours are almost destitute of lustre. The fruit or hips afford a pleasant confection, which is sometimes brought to table on the continent, and is used as an ingredient in sauces. In the north of Europe, the pulp with the addition of sugar is sometimes made into wine. The Russians of the Volga prepare a spirit from the flowers, by fermentation, and the fruit appears very suitable for this purpose. A gallon of hips mixed with a little water yields two pints of first runnings, which being redistilled affords a pint of pure spirit.

The odour of the recent flowers is agreeable and fragrant, and the taste bitterish, slightly astringent, and sub-acescent; which qualities are yielded to water by infusion. The succulent covering of the fruit is inodorous, and has a pleasant sweetish, acidulous taste, which is said to depend on citric and malic acids. The slight astringent property appears to be owing to tannin. The carpels, popularly termed "seeds," are embedded in silky bristly hairs, which act as mechanical irritants like cowhage. A morbid excrescence of a bright greenish red colour, and generally of an ovate form, is found on the different parts of the shrub; it is produced by the puncture of an insect, (*cynips rosæ*, Lin.) which thus procures an habitation for its eggs and larvæ. It was called in the old pharmacopœias *Bedegar*, or *Bedeguar*, and was celebrated for its astringent properties.

Medicinal Properties and Uses.—We have already adverted to the ancient reputation of the root of this shrub for its efficacy in hydrophobia*, a property which we need not say is totally illusive. The flowers have received equally unmerited praise in diseases of the eyes, and the carpels, called "seeds," in nephritis and calculous complaints; their employment in which originated from the belief reposed in *signatures*.

The pulpy part of the fruit was at one period considered diuretic, laxative, lithontriptic, &c., and was exhibited in diarrhœa, dysentery, and other fluxes, and in dropsy†. A more sober estimate of its powers, proves it to be simply diluent,

* See Hagedorn, Cynosbatologia, p. 136, sqq.

† See Hermann's Dissertatio de Rosa, § 11.

refrigerant, and slightly diuretic, but more nutrient than medicinal. The gall, or *bedeguar*, is astringent, and somewhat styptic, but is very little employed.

The expanded petals are reputed to possess an equally laxative virtue with those of *R. centifolia*, and when folded up in the bud to be astringent like the *R. gallica*. For either of these, therefore, it may be substituted.

CONFECTION OF DOG-ROSE *.

Take of	pulp of the Dog-Rose	one pound.
	refined sugar, in powder ...	twenty ounces.

Rub them together until they are well incorporated.

⁂ The chief objection to this preparation is the difficulty of separating the bristly hairs which line the interior of the fruit, and are capable of producing considerable irritation in the mouth, throat, and stomach, pruritus ani, and sometimes vomiting; hence one of the French vulgar names of the hip, *gratte-cul*.—The most effectual method is to slice the fruit longitudinally, carefully remove the seeds and hairs, and expose the pulp to a gentle heat in a water-bath, or leave it till it begins to grow soft, and then press it through a hair-sieve. The Parisian codex has the following directions for preparing the pulp: "Cut off the umbilicus and the pedicel, remove the seeds, and macerate the rest in two parts of white wine for three or four days, until it is completely softened; then bruise it in a marble mortar with a wooden pestle, and strain the pulp through a piece of silk."

The conserve is a useful article of diet in febrile disorders, but very little confidence can be reposed in its astringent, diuretic, and stomachic properties. Boiled with raisins and prunes, it is also serviceable in costive habits, and it may be taken to the amount of two ounces or more. It is chiefly employed as a vehicle for more active medicines, for making pills and electuaries, and as an ingredient in linctuses, to allay irritation in troublesome coughs. "The following linctus has been recommended:—

Take of	Conserve of hips......	two ounces.
	Oil of almonds........	two drachms.
	Tincture of squills	one drachm.
	Tincture of opium	twenty drops.

Mix and form a linctus. A teaspoonful to be taken when the cough is troublesome."†

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* Confectio rosæ caninæ. *Pharm. Lond.*

† Waller's Brit. Dom. Herb. p. 194.

CLV.

ROSA GALLICA.

Red, French, or Provins Rose.

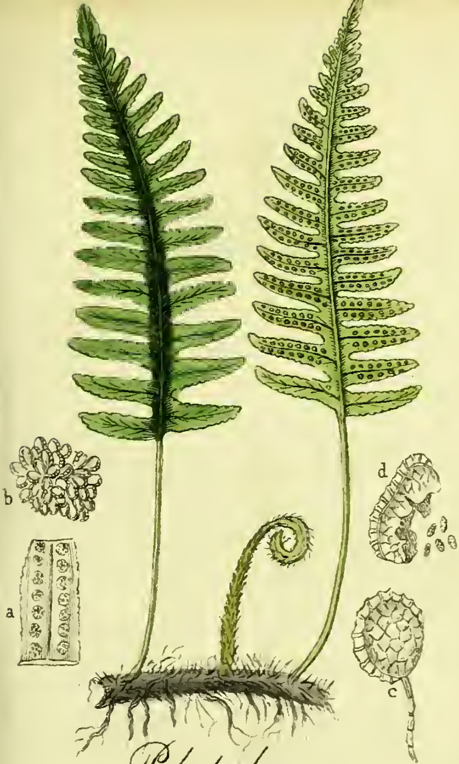
Class, &c. See Dog Rose (*Rosa Canina*).

Spec. Char. Prickles uniform, nearly equal, weak. Leaflets stiff, elliptical. Flowers erect. Sepals ovate. Fruit subglobose.

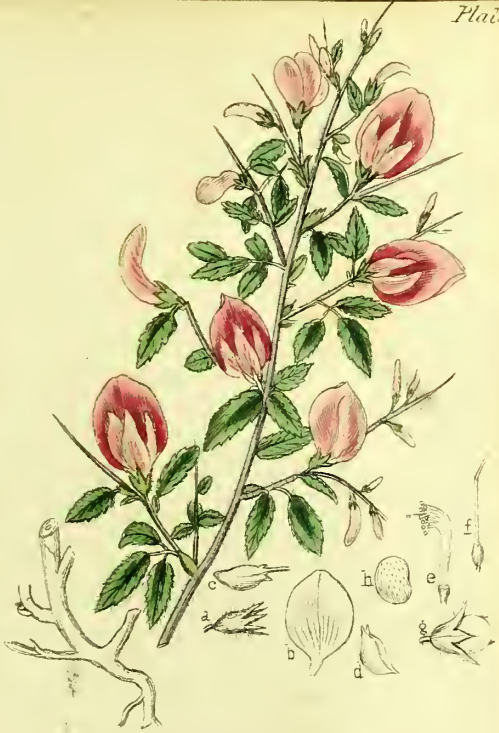
SYNONYMES.

Greek	*ροδον.*
Latin.	Rosa rubra multiplex. *Bauh. Pin.* 481.
	Rosa anglica rubra. *Park. Parad.* 412.
	Rosa purpurea sanguinea. *Lob. adv.* 446.
	Rosa centifolia. *Mill. Dict.* No. 41.
	Rosa sylvatica. *Gater Mont.* p. 94.
	Rosa rubra. *Lam. Fl. Fr.* iii. p. 130.
	Rosa gallica. *Lin. Sp. Pl.* 704. *Redouté Roses*, vol. i. p. 73, t. 25; p. 135, t. 52; vol. ii. t. 7, 8, 10.
French. ..	Rose rouge; Rose de Provins.
Italian . ..	Rosa domestica.
Spanish ..	Rosa rubra; Rosa Castellana.
Port.	Rosa vermalha.
German ..	Essigrose; Rothe Rose.
Dutch	Fransche Rosen.
Danish....	Edike Rose.
Swedish ...	Rœttikeroser.
Polish	Rosa damascenskie.

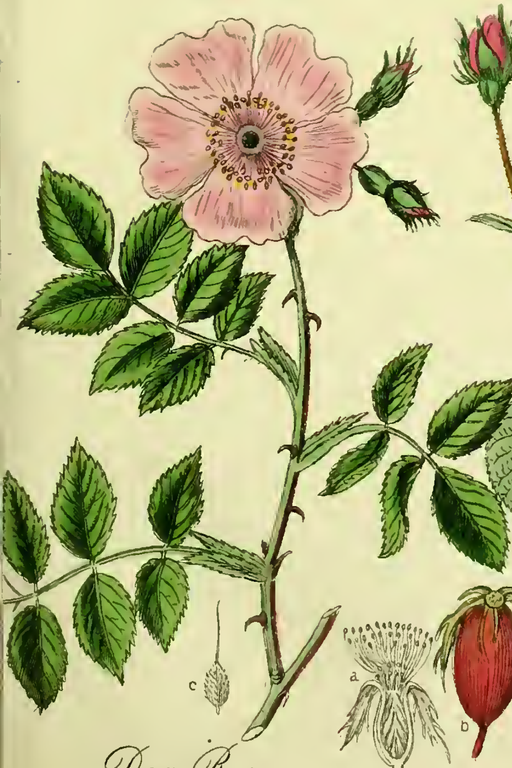
Description.—The stems are branching, from three to four feet high, armed with fine, dispersed, short, slightly hooked, reddish prickles. The leaves are alternate, petiolate, winged, composed of five to seven stiff elliptical or somewhat ovate leaflets, smooth, and of a deep green above, paler, glaucous or whitish and downy beneath, glandular at the margin; the nerves and petioles are also glandular. The stipulæ are linear-lanceolate, pointed, downy, and glandular. The flowers are



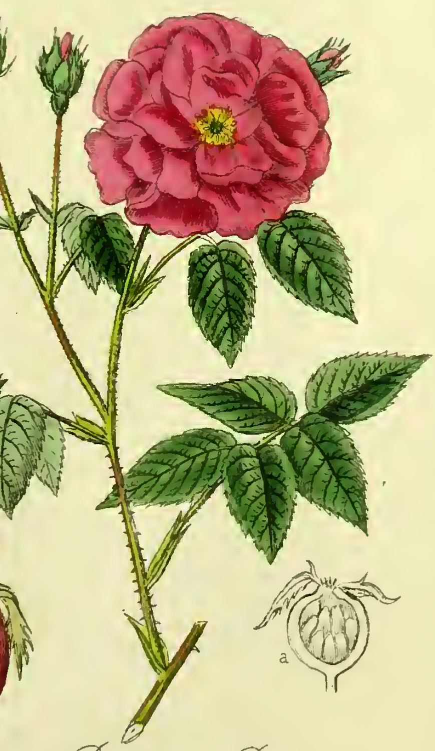
Polypody



Rest-Harrow



Dog Rose



Provence Rose

solitary, pedunculate, lateral, or terminal; the peduncles elongated, more or less hispid, glandular. The calyx consists of a globose tube, and a limb with five downy, alternately pinnatifid segments. The corolla is large and usually of an intense purplish red colour ; the petals are slightly crenate, and yellowish at the base. The stamens are numerous, with subulate filaments and linear, incurved yellow anthers. The germens are numerous, ovate, supporting filiform villous styles, connivent below, terminated by capitate truncate stigmas. The fruit is somewhat globose, nearly smooth, and of a pale crimson colour. Plate 38, fig. 4, (*a*) longitudinal section of the fruit, showing the carpels.

This elegant and beautiful shrub is indigenous to the south of Europe, and is common in our gardens, where it flowers in June and July.

The officinal Red Rose is named *gallica*, from its being considered a legitimate native of France; whereas most of the cultivated roses may be traced to the East. It is styled by some of our old writers the English Rose. We find the French writers call it *Rose de Provins;* but in most English works the name of Provins Rose is bestowed upon the Hundred-leaved or cabbage Rose (*R. centifolia*).

The genus Rosa is extensive, not merely as regards the number of species, but in the almost infinite varieties which have arisen from the assiduous cultivation of every favourite kind; in consequence of which the botanical study of the Roses is intricate, and so closely allied are the different kinds, and their distinctive characters so variable, that there is much diversity of opinion as to which are really species and which varieties. The best esteemed and well known kinds are the Scotch Rose (*R. spinosissima*), of which there are more than 300 varieties; the Hundred-leaved Rose (*R. centifolia*); the Damask Rose (*R. Damascena*); the White Rose (*R. alba*); the Sweet Briar, or Eglantine, (*R. rubiginosa*); the Indian or Monthly Rose (*R. Indica*), and the species now under consideration.

It is quite unnecessary to say anything in praise of the Rose; in every land emphatically the flower of love and poetry; and signalised by almost every poet ancient and modern. Indeed to repeat all that has been said and sung respecting the queen of flowers would fill a volume. In the glowing fiction of the ancient mythology, the Rose was represented as originally white, but to have been changed in hue by the blood which streamed from the lacerated feet of Venus, when traversing the woods in despair for the loss of Adonis. According to Anacreon it was dyed by the gods when first formed, and was sacred to Bacchus. The rose was dedicated by Cupid to Harpocrates, the god of silence, to engage him to conceal the *amours* of Venus. Hence it became the emblem of silence, and to hold up this flower to any person in discourse was equivalent to a request for secresy; and at entertainments it was customary to place a rose above the table to signify that what was then spoken should be kept private; to this practice we owe the common expression "under the rose." The Romans introduced roses in common with other flowers, at the festive board, both to gratify the senses with their brilliant colours and grateful odours, and from some vague notion that their aroma prevented head-ache and the injurious effects of the wine; they were woven into chaplets for the brows, and sometimes crowned the brim of the goblet. Horace exclaims,—

"Neu desint epulis rosæ."

—although, in another place, he expresses a very different wish,—

"Persicos odi, puer, apparatus.
Displicent nexæ philyra coronæ:
Mitte sectari, rosa quo locorum
Sera moretur.
Simplici myrto nihil allabores
Sedulus curo."

Indeed it was a very expensive luxury, to procure roses at all times in the year. Suetonius relates, that Nero spent upwards of 4,000,000 sesterces (about 30,000 pounds,) for roses, at one supper.

The Greeks and Romans were also accustomed to strew roses upon the tombs of departed friends. Anacreon, in his fifty-third ode tells us that this flower is peculiarly grateful to the dead, "τοδε και νεκροῖς αμυνει." This practice was considered of so much importance that it was enjoined by codicils annexed to their wills, as appears by an inscription at Ravenna and another at Milan. In this country, in the time of Evelyn, it was the custom to plant roses round the graves of lovers, and to strew the flowers upon the graves of friends, and the practice, we believe, is not yet quite obsolete. In some parts of the kingdom the bride is welcomed on her first appearance by strewing her path with roses.

The rose must not be forgotten as the national emblem of England; it is also rendered interesting from its connexion with the armorial bearings of some of the most ancient and noble families of Europe. The Roman emperors appear first to have constituted it a symbol of honour, by allowing their distinguished generals to inscribe it upon their shields. A golden rose has been considered a fit present from one sovereign to another: particularly when consecrated by the Pope. Henry the Eighth received such a gift from Alexander the Sixth. In no country is the rose more cherished and culvated than in Persia, and no where is it found in greater plenty and profusion *. The Eastern poets generally associate this flower with the nightingale, and represent the rose as bursting forth from its bud at the song of her tuneful lover †.

Chaucer has written much in praise of this charming flower, and has given us a "Romaunt of the Rose," to which we must refer our readers. Spenser and Shakspeare have several beautiful allusions to the rose, both in its infant and mature loveliness; and there is a fine simile in Tasso's Gerusalemma Liberata (Canto XVI.). Milton has introduced it in his Paradise Lost, especially on two occasions, with exquisite effect ‡.

QUALITIES.—The petals are the only part used medicinally. They are gathered before expansion, deprived of the claws, and dried quickly by means of a gentle heat. In this state, they are pleasantly bitter and austere to the taste, and possess a more fragrant odour than in their recent state. Boiling water extracts their odour, colour, and flavour; and the infusion takes a dark colour with sulphate of iron, and forms a dark precipitate with sulphate of zinc. Rectified spirit also extracts their virtues. The extracts are bitter, astringent, and sub-austere.

According to the analysis of M. Cartier, the petals of Rosa Gallica contain tannin, gallic acid, colouring matter, volatile oil, fatty matter, albumen, salts of potash and lime, silicic acid, and oxide of iron.

The substance called *attar*, *otto* or *uttir* of roses is chiefly prepared from the different varieties of *R. centifolia*, but other species afford it, such as *R. damascena*. According to Dr. Ainslie, the attar of the Levant and Tunis is obtained from *R. sempervirens*.

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* See Moore's Lalla Rookh; Sir R. K. Porter's Persia in Miniature; Sir W. Ouseley's Travels in the East.

† See Byron's Giaour, and Bride of Abydos.

‡ Paradise Lost, Book ix. l. 424—34, and l. 888.

The usual mode of procuring attar in the east, as described by Colonel Polier in the Asiatic Researches, is as follows:—

"Forty pounds of roses are put into a still with sixty pounds of water. The mass being well mixed, a gentle fire is put under the still; and when the fumes begin to rise, the cap and pipe are properly fixed and luted. When the impregnated water begins to come over, the fire is lessened by gentle degrees, and the distillation continued until thirty pounds of water have come over, which is generally done in about four or five hours. The water is to be poured upon forty pounds of fresh roses, and thence are to be drawn from fifteen to twenty pounds of distilled water, by the same process as before. It is then poured into pans of earthenware, or of tinned metal, and left exposed to the open air for the night. The attar or essence will be found in the morning congealed and swimming on the surface of the water. This is to be carefully separated and collected, either with a thin shell or a skimmer, and poured into a phial. When a certain quantity has been obtained, the water and fæces must be separated from the clear essence, which, with respect to the first, will not be difficult, as the essence congeals with a slight cold, and the water may then be made to run off. If after that, the essence is kept fluid by heat, the fæces will subside and may be separated; but if the operation has been neatly performed, there will be little or none. The fæces are as highly perfumed as the essence, and must be kept, after as much as possible of the essence has been skimmed off. The remaining water should be used for fresh distillations, at least as far as it will go."

MEDICINAL PROPERTIES AND USES.—The petals of the red Rose are astringent and tonic, and have been called roborant, resolutive, repercussive, &c. It has been remarked, that in some cases, they have a purgative effect,—the result of the excitation produced on the intestinal canal (?) Thus Poterius * relates that he found a drachm of the petals reduced to powder, sufficient to produce three or four alvine evacuations, and this not in a solitary instance, but frequently in the course of an extensive practice. It is probable that this laxative property is constant in the fully expanded flowers, as in those of the Hundred-leaved Rose (*R. centifolia*). The usual effect of the red Rose is to improve the tone of the stomach, and consecutively, that of the lungs and other organs which sympathise with it. Thus it has been especially recommended in chronic catarrhs, hæmoptysis, diarrhœa, leucorrhœa, &c. Great efficacy has been ascribed to it in pulmonary phthisis, ever since the time of Avicenna †, who states that he cured several cases by prescribing as much of the conserve as the patient could take, every day. Mesue ‡, Montana,

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* Opera, p. 515.

† Lib. iii. Fen. 10. Tract. 5. cap. 5.

‡ Cap. de phthisi.

Valeriola, Forestus, Riverius[*], Kruger[†], and others bear testimony to the same effect. They all, however, combined it with milk or other nutritious substance, and sometimes before a cure was effected, from twenty to thirty pounds of the conserve were consumed by the patient.

The essential oil, by virtue of its powerful aroma, acts promptly and vigorously upon the nervous system, and consequently upon the heart and brain. Hippocrates was not ignorant of its powers, and he recommends it in diseases of the uterus. In the present day, it is seldom or never employed medicinally. Much, however, remains to be discovered as to the therapeutic effects of odours. We are assured that, pleasant as the odour of roses is to most individuals, it has, like the aroma of the lily and other flowers, acted as a poison upon certain individuals, severely affecting the nervous system, producing headache, fainting, hysteria, &c., and sometimes local irritation, such as inflammation of the eyes. Persons are stated to have died from being exposed to the emanations of a large quantity of the flowers in a close apartment[‡].

Externally, the petals of the red Rose are employed in various ways. In a powdered form, they enter into various sternutatories; made into cataplasms, &c., they are sometimes used to favour the resolution of cold and indolent tumours, or atonic swellings. The aqueous or vinous infusion is employed in the form of local bath or fomentation to relaxed parts. The distilled water serves as a collyrium for the eyes, but it is generally combined with sulphate of zinc or acetate of lead.

The dose of the dried petals is from half a drachm to a drachm in powder; or an ounce to a pint of water in the form of infusion. An excellent stomachic tea, much more salubrious than the foreign herb, is made with equal parts of the petals of red Rose, and the leaves or tops of Balm, and Rosemary. The following are the officinal preparations.

CONFECTION OF THE RED ROSE[§].

Take of unblown petals of the red Rose freed from the claws	one pound.
Refined sugar	three pounds.

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[*] Prax. Med. lib. vii. cap. 7.

[†] Eph. Nat. Cur. Dec. ii. Ann. 4, obs. 9.

[‡] See Murray's Appar. Med. tom. iii. p. 160.

[§] Confectio Rosæ. *Pharm. Lond.*, 1836.

Beat the petals in a stone mortar; then add the sugar, and beat again till the whole be thoroughly incorporated.

⁂ With all deference to the college, we submit that they order more sugar than is necessary; two or three of the foreign Pharmacopœias recommend no more than an equal weight of sugar and petals.

Dose.—An ounce or more, and it may be taken to an indefinite extent in pulmonary complaints. It is principally used by practitioners as a pleasant vehicle for salts, sulphate of quinine, and the mineral acids, and in the manufacture of electuaries and mercurial pills.

COMPOUND INFUSION OF RED ROSES[*].

Take of dried petals of red Rose	half an ounce.
Boiling water	two pints and a half.
Dilute sulphuric acid	three drachms.
Refined sugar	one ounce and a half.

Pour the water on the petals in a covered glass vessel; then drop in the acid and macerate for half an hour. Finally, strain the liquor, and add the sugar.

This infusion is a pleasant acid drink in febrile disorders, and has been recommended in passive hæmorrhages, and the sweats of consumptive patients. Dose, from one to two ounces. It is an elegant vehicle for the neutral salts. It is also useful as a gargle.

ROSE HONEY[†].

Take of petals of the red Rose, dried	four ounces.
Boiling water	three pints.
Clarified honey	five pounds.

Macerate the petals in the water for six hours, add the honey to the filtered liquor, and boil it down to a proper consistence by the aid of a water bath.

This preparation is very useful as a detergent and antiseptic in aphthæ, ulcers of the mouth and nose, and in fistulæ. It is also employed as an adjunct to other remedies, in gargles and injections.

The Edinburgh Pharmacopœia also contains a Syrup of Roses; this has similar properties to the foregoing.

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[*] Infusum Rosæ. *Pharm. Lond.*, 1836.

[†] Mel Rosæ. *Pharm. Lond.*, 1836.

CLVI.

ROSMARINUS OFFICINALIS.

Common Rosemary.

Class II. Diandria.—*Order* I. Monogynia.

Nat. Ord. Labiatæ.

Gen. Char. *Corolla* unequal, ringent; helmet arched, bifid. *Filaments* long, curved, with a tooth. *Seeds* naked.

Spec. Char. Leaves sessile.

SYNONYMES.

Greek	λιβανωτις.
Latin	Rosmarinus hortensis angustiore, et spontaneus latiore folio. *Bauh. Pin.* 217. Rosmarinum coronarium. *Ger. Em.* 1292. *Dod. Pempt.* 272. Rosmarinus coronarius fruticosus. *Raii Hist.* 515. Libanotis coronaria, sive Rosmarinum vulgare. *Park. Theatr.* 74. Rosmarinus officinalis. *Lin. Sp. Pl.* 33. *Fl. Græca,* t. 14.
French	Romarin; Romarin officinal.
Italian	Rosmarino; Romerino.
Spanish	Romero.
Portuguese	Rosmarinho.
German	Rosmarin.
Dutch	Rosmaryn.
Danish & Swedish	Rosmarin.
Polish	Rosmaryn.
Arabic	Klil; Hasalaban achsir.
Chinese	Yong tsao.

Description. Rosemary is an evergreen, shrubby plant, much branched, leafy and downy, and rises from three to five feet in height. The leaves are sessile, opposite, linear, firm, about an inch in length, deep green and shining above, downy or whitish beneath, with the margins revolute. The flowers are axillary, in tufted, opposite cymes, with an ovate-concave, tomentose bractea at the base of each pedicel. The calyx is slightly pubescent, bilabiate, compressed at the summit; the upper lip emarginate, rather shorter, the lower with two lobes. The corolla is pale blue, variegated with purple and white, ringent, with the tube longer than the calyx; the upper lip oblong, erect and bifid; the lower lip spreading, with three unequal lobes; the middle lobe large, concave, roundish, and crenulate at the margin. The stamens are two, with subulate filaments, curved and longer than the corolla, with a small recurved tooth near the base behind; anthers oblong, incumbent, blueish. The germen is four-parted, green, obtuse, supporting a subulate recurved style as long as the stamens, terminated by an acute bifid stigma. The fruit consists of four achenia situated at the bottom of the persistent calyx. Plate 39, fig. 3, (*a*) calyx; (*b*) corolla opened to show the stamens; (*c*) pistil.

Rosemary grows abundantly on rocks in the southern countries of Europe. It was probably introduced to this country by the monks in the dark ages, and has long been a favourite tenant of the British garden, where it flowers in April and May.

This plant appears to be the λιβανωτις στεφανοματικη of Dioscorides, from λιβανος, *frankincense*, in allusion to its odour; and from στεφανος, *a crown*, because of its employment among plants used for garlands and chaplets; hence also one of its Latin names, *herba coronaria*. The generic name is a compound of *ros*, *dew*, and *marinus*, *of the sea*, in allusion to the locality of the plant and its greyish appearance. It is supposed to be the *ros* mentioned in the following lines of Virgil:—

> Nam jejuna quidem clivosa glarea ruris,
> Vix humiles apibus casias roremque ministrat.
>
> *Georg.* ii. v. 212.

Rosemary is often introduced in the old erotic ballads, and in the lays and *fabliaux* of the Troubadours. On account of its aromatic and cephalic properties, it was considered by the ancients to refresh the memory and comfort the brain, and was called "herb of remembrance" and "forget me not"; hence also its claim to represent fidelity in lovers, and its employment at weddings and funerals. It is not uncommon in some parts of England to put rosemary in the coffin, and to distribute sprigs of it among the mourners, who throw it into the grave. Shakspeare refers to this practice :—

"Dry up your tears,
And stick your rosemary on this fair corse."
Romeo and Juliet, act iv. sc. 4.

Gay also alludes to it in his "Shepherd's Week":—

"To show their love, the neighbours far and near
Followed with wistful looks the damsel's bier.
Sprigged rosemary the lads and lasses bore,
While dismally the parson walked before.
Upon her grave the rosemary they threw,
The daisy, butter-flower, and endive blue."

"There's rosemary for you, that's for remembrance ; pray you, love, remember," says Ophelia in Hamlet ; and Perdita in the Winter's Tale, thus addresses Polixenes and Camillo,—

——— "Reverend sirs,
For you there's rosemary and rue ; these keep
Seeming and favour all the winter long ;
Grace and remembrance be to you both."

Spenser calls it "refreshing rosemary," "cheerful rosemary," and Shenstone, in his Schoolmistress, has some pretty lines on its banishment from the gardens of the great.

The wild Rosemary is larger than the cultivated kind, the flowers also are larger, and deeper coloured, and the leaves green on both sides and plane at the margin. There are two distinct varieties of the cultivated plant; one with white striped leaves, called *Silver Rosemary*, the other with yellow stripes, denominated *Golden Rosemary*. It prefers naturally a poor dry soil, or rubbish of old buildings, and when it has established itself on a wall, will resist the greatest cold of our winters.

Qualities and general Uses.—Rosemary is sometimes used on the continent for flavouring hams, rice, &c. It is extensively employed in the preparation of various perfumes and cosmetics, especially the famous Hungary water. The plant has had the repute of greatly improving the flesh of sheep that feed on it.

Rosemary has a grateful aromatic odour, approaching to that of the *turpentines*, and a warm, bitterish, aromatic taste. The young tops are more powerful than the flowers, but the latter have a more elegant odour, which resides principally in the *calyces*, the petals having very little either of smell or taste. The aroma appears to be owing to a volatile oil, which rises in distillation with water, and which is combined with camphor. This oil is limpid, pale yellow or greenish, very fragrant, but less agreeable than the plant itself, with a specific gravity of .9108. About one drachm is obtained from a pound and a half of the flowering tops. Rectified spirit extracts the aromatic and stimulating principle of the plant better than water, but the latter obtains by infusion sufficient of its bitterness and aroma to render it a useful stomachic and nervine; hence Rosemary tea is a favourite remedy with country people.

We have already mentioned, that Rosemary is very usefully combined with the dried petals of the red Rose and Balm, as a medicinal tea. Bruising the flowers destroys in a great measure their fragrance; consequently the conserve recommended by some is not a suitable preparation.

Medicinal Properties and Uses.—Rosemary is essentially tonic and excitant, and when ingested produces a heat in the stomach. Its exciting powers are particularly transmitted to the nervous system, and it stimulates all the organic functions; —thus it augments the action of the heart, accelerates circulation, and urges the exhalant, cutaneous, and other vessels. As a tonic it is useful in atony and debility, but from its stimulating property, it should not be given in inflammatory cases nor those accompanied with heat, thirst, dryness of the skin, or general irritation. In affections of debility, where we wish to excite the action of certain organs, it is a highly approved remedy, particularly in nervous diseases, in hysteria, syncope, apoplexy, asphyxia, paralysis, and against the paroxysms of some intermittent fevers; as also in idiopathic dyspepsia, and hypochondriasis. In female complaints, especially those arising from obstruction, in leucorrhœa *, and in chlorosis †, its emmenagogue effects are explained by its action on the vessels of the uterus in common with the sanguineous system. Dr. Cullen [*], although he admits it entitled to some reputation as a cephalic, or as a medicine that gently stimulates the nervous system, thinks it hardly capable of affecting the sanguiferous; this opinion, however, is contradicted by its diaphoretic influence in recent and chronic colds, in humid asthma [†], and according to Welsch [‡], in chronic diarrhœa.

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* Schultz, ex Flore Medicale, tom. vi. p. 44.

† Bergius, Mat. Med. p. 21.

Externally, it has been employed in baths for paralysis, and also as an ingredient in fomentations, to disperse indolent tumours and ecchymosis free from pain. Heister and Kuechler [§] assert that they have witnessed excellent effects from the topical application of an infusion or decoction of this herb to scrofulous tumours of the neck. Applied dried in bags, it is sometimes used to remove bruises, and against œdema. Infused in wine, and applied warm, it is said to stay mortification. Lastly, the spirit and essential oil are by no means infrequently had recourse to, applied by friction, to recall animation in paralytic limbs.

The best form for the exhibition of Rosemary is in that of an infusion or tea: the essential oil may be given in doses of from one to five drops in sugar, yolk of egg, or any other convenient vehicle.

INFUSION OF ROSEMARY.

Take of Rosemary tops, dried....	two ounces.
Boiling water..........	one pint.

Infuse for a quarter of an hour, and strain.—Dose, an ordinary cupful every four or six hours.

SPIRIT OF ROSEMARY [||].

Take of Oil of Rosemary......	two drachms.
Rectified spirit.......	one gallon.
Water..............	one pint.

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[*] Cullen, Mat. Med. vol. ii. p. 151.

[†] Borell. Hist. et Obs. *Cent.* 4. *Obs.* 46.

[‡] Welsch, Hecatostea, ii. n. 51. p. 29.

[§] Heister, Med. Prac. p. 264.—Kuechler in Diss. de gland. colli puerorum tumefactis, p. 47.

[||] Spiritus Rosmarini. *Pharm. Lond.* 1836.

Mix; then with a slow fire let a gallon distil.—Dose, from one drachm to four; but generally employed externally.

HUNGARY WATER[*].

Take of Flowers of Rosemary	one pound.
——— Lavender	four ounces.
Proof spirit	six pounds.

Digest for twelve days, and distil three pounds.—Used for the same purposes as *Eau de Cologne*.

AROMATIC VINEGAR[†].

Take of Rosemary tops, dried	one ounce.
Sage leaves, dried	one ounce.
Lavender flowers, dried	half an ounce.
Cloves	half a drachm.
Dilute acetic acid	two pounds.

Macerate for seven days, and filter the expressed liquor.—An agreeable pungent cephalic and nervine.

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[*] Pharmacopœia Danica, 1805.

[†] Acidum Aceticum aromaticum. *Pharm. Edin.*

CLVII.

RUTA GRAVEOLENS.

Common Rue.

Class X. Decandria.—*Order* I. Monogynia.

Nat. Ord. Rutaceæ.

Gen. Char. *Calyx* five-parted. *Petals* five, concave. *Receptacle* surrounded by nectariferous pores. *Capsule* subglobose, lobed.

Spec. Char. Leaves supra-decompound; leaflets oblong, terminal one obovate. Petals entire, or slightly toothed.

SYNONYMES.

Greek	πηγανον.
Latin	Ruta hortensis latifolia. *Bauh. Pin.* 336. *Duh. Arb.* 2. t. 60. Ruta hortensis et montana. *Ger. Em.* 1255. Ruta hortensis major. *Park. Theatr.* 132. Ruta graveolens hortensis. *Dod. Pempt.* 119. Ruta graveolens. *Lin. Sp. Pl.* 548. *Lam. ill.* 345. t. 1.
French ..	Rue; Rue des jardins.
Italian	Ruta.
Spanish & Portuguese	Ruda; Arruda.
German ..	Raute; Gartenraute.
Dutch	Ruite.
Danish . ..	Rude.
Swedish ...	Ruta; Winruta.
Pol. & Rus.	Ruta.
Arabic	Sendib.
Hindoost ...	Saturi.
Javanese .	Inghu.
Tamool ..	Aruda.
Malay ...	Sadsa.

Description.—Rue is an evergreen shrubby plant, from two to three feet in height, with firm, cylindrical, bushy stems, covered with a rough greyish bark, but in the young branches, smooth and yellowish green. The leaves are alternate, petiolate, doubly pinnate; the surface slightly tomentose, punctured, smooth, and of a glaucous or dark blueish green colour; the leaflets are rather of a thick texture, oblong, elongated, and decurrent at the base, somewhat cuneiform, entire, or obscurely crenate at the margin, the terminal one obovate or cuneiform. The flowers are produced in a terminal corymb, the terminal flowers only, which open first, having the full complement of petals and stamens, the rest have a four-parted calyx, four petals, and eight stamens. The calycine segments are lanceolate, punctured, minutely crenulate, and spreading horizontally. The petals are yellow, ovate, concave, spreading, slightly toothed or wrinkled at the extremity, and are attached by narrow claws. The stamens* of the terminal flower are ten, reclining on the petals, with subulate filaments tipped with ovate yellow anthers. The germen is large, ovate, punctured, deep green, with four crucial furrows, seated on a fleshy receptacle dotted with nectariferous pores, crowned with a short tetragonal style, and a truncate stigma. The fruit is a sub-globose four or five lobed capsule, bursting elastically at the summit of each lobe, and emitting several rough, angular, blackish, reniform seeds. Plate 39, fig. 4, (*a*) terminal flower from which the petals are detached, magnified; (*b*) fruit; (*c*) transverse section of the same.

Rue is a native of the south of Europe, in mountainous and sterile situations, and has been cultivated in our gardens from time immemorial, where it flowers from June to September.

The generic name, Ruta, is derived from the Greek ρυτη, and that, it is said, from ϱυω, to *set free*, on account of the efficacy

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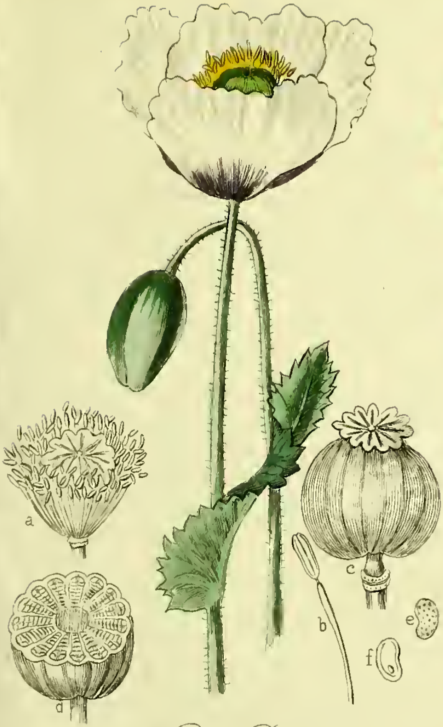
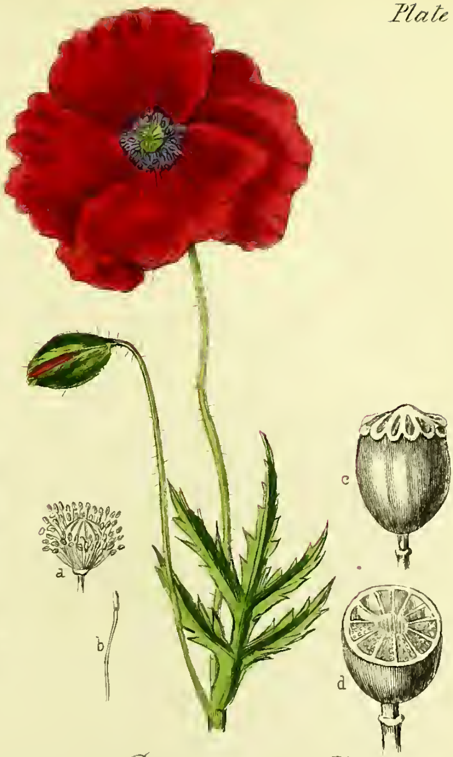
* The stamens exhibit a curious and remarkable phenomenon. They are all fixed in nearly a horizontal position, at first, viz., reclining upon the petals, but one by one they successively rise up and discharge the pollen upon the stigma, and then return to their original posture. This movement is not the result of irritability, at least from external agents, as in the stamens of the Barberry, but appears to be a spontaneous act, since they are strong conical bodies, and cannot be forced from their position by a quill or other substance without breaking them.

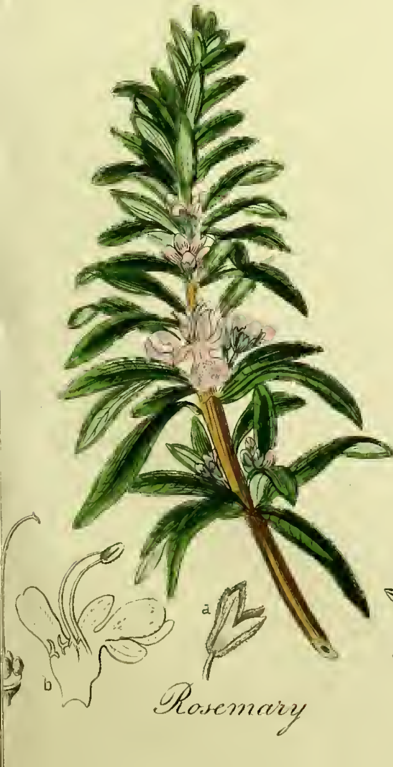
Plate 39



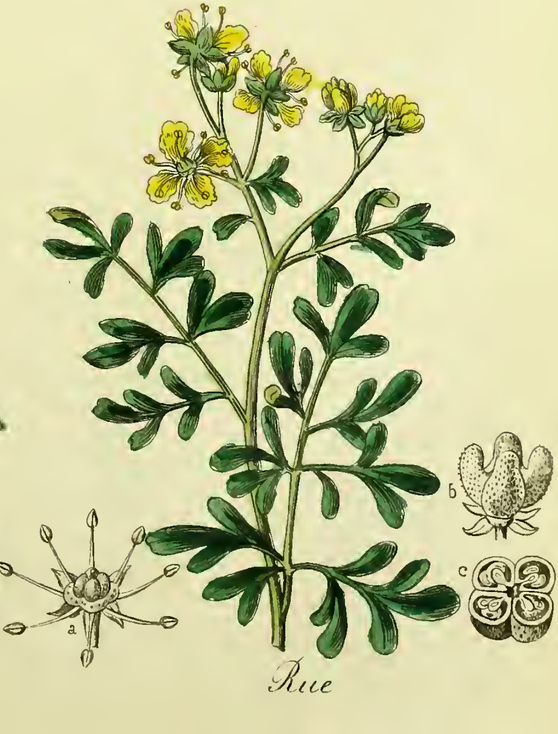
White Poppy



Red or Corn Poppy



Rosemary



Rue

of the plant in various diseases; but this is rather a forced derivation, and unsatisfactory as to the true root of the word. In Sclavonic it was called *rutiza*, and in Anglo-Saxon, *rude*, *ruta*, or *rutu*. Rue is frequently mentioned by Hippocrates, Theophrastus, and Dioscorides [*], under the name of *πηγανον*; the latter does not describe it, but he compares the leaves of many other plants to the *folia rutæ*.

Gerard mentions *Herb-Grace*, as one of the common names of this plant, and Shakspeare calls it *Herb of Grace*. It is still called *Ave-grace* in some parts of England, most probably in allusion to the expression *Ave-Maria gratiâ plena*. It appears to have received this name from its use in the exorcisms ordained by the Romish church. Ophelia, in Hamlet, says to the Queen, "There's rue for you, and here's some for me; we may call it herb of grace a Sundays:" referring to the great need her majesty had of absolution for her crimes. Greene, in his Quip for an Upstart Courtier, has this passage—"Some of them smiled, and said Rue was called *herb grace*, which though they scorned in their youth they might wear in their age, and that it was never too late to say *miserere*." The gardener in Richard II. says of the Queen:—

"Here did she drop a tear; here in this place,
I'll set a bank of Rue, sour *herb of grace*:
Rue even for ruth, here shortly shall be seen,
In the remembrance of a weeping queen."

He here plays upon the name, and represents rue as the herb of remembrance, a title which belongs to the rosemary, as already observed. It might more correctly be called Herb of repentance.

"Rue seems to have been used formerly in nosegays; for the clown in 'All's well that Ends Well,' having said of the Countess,—'she was the sweet marjoram of the salad, or rather the herb of grace.' Lafeu replies, 'They are not salad herbs, you knave, they are nose-herbs;' upon which the Clown remarks, 'I am no great Nebuchadnezzar, sir, I have not much skill in grass;' thus punning upon the name of grace."[*]

Alston observes, "I have not seen Rue infested with insects, and it is said to be hated by toads, and therefore planted among sage. Hence, '*Salvia cum ruta faciunt tibi pocula tuta*.'"

Qualities. Rue has a strong, stimulant, disagreeable odour, and a hot, pungent, bitter, and nauseous taste. The wild plant is said to possess these qualities in a greater degree than the cultivated kind. In the recent state, the leaves have sufficient acrimony to inflame and blister the hands; but much of this property is lost in drying. The volatile oil, on which its properties chiefly depend, is obtained in part by distillation with water. Rectified spirit, by infusion, takes up more of its virtues than water. On inspissating the spirituous tincture, very little of its flavour rises with the menstruum, nearly all the active matter remaining behind in the extract, which is therefore a suitable form for administration. The capsules and seeds afford more volatile oil than the other parts of the plant. The oil is acrid, bitterish, and rather more disagreeably odorous than the plant itself, yellowish at first, deepening to brown by age, and depositing a brownish resinous sediment. It congeals at 40° Farenheit, and is said to be more soluble in water than the other volatile oils.

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[*] Mat. Med. lib. iii. c. 52.

[†] Martyn.

Poisonous Properties.—Orfila found that the distilled water, and watery extract, given to animals in large doses, caused death after a long interval, by producing local irritation, and consequent inflammation. He also states, that the essential oil introduced into the veins acts as a narcotic, and probably has the same effect when taken into the stomach; but it is not energetic. We are not acquainted with any serious case of poisoning by this plant in the human subject; but the incautious use of it as a domestic remedy is calculated to produce mischief, as the effects produced by handling it too long testify *, and the excoriation of the lips and nostrils, occasioned by applying it too closely, for the purpose of warding off contagion, and counteracting fetid odours.

Medicinal Properties and Uses.—That this plant is a potent stimulant, is proved by the irritation it produces when bruised and applied to the skin, as already observed. By the ancients it was especially regarded as wielding powerful influence over the nervous system in general, and over the uterus in particular. It was celebrated even in the days of Pythagoras. Hippocrates designates it resolutive, diuretic, and alexiterial; but its reputed anti-contagious properties are now scarcely credited, notwithstanding Boerhaave's recommendations. Galen esteemed it carminative, in flatuosities and colic, but it was justly observed

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* This was observed by Dioscorides—"Si montana (ruta) sub id tempus quo florere incipit, ad muriæ condituram colligatur cutem rubefacit, ac inflat, cum pruritu et vehementi inflammatione."—Mat. Med. lib. iii. c. 52.

by S. Pauli, that such a stimulant would be injurious rather than beneficial, when these complaints are owing to irritation of the alimentary canal, as not infrequently happens. Cullen *, however, had no doubt in asserting its anti-spasmodic powers; hence in some cases of spasmodic colic, &c. it may unquestionably be useful. Rue is likewise much lauded in epilepsy, hysteria, and other nervous diseases. Alexander of Tralles, Valeriola, Boerhaave, and many others, knew it to be successful in these affections. Its effects are not less praised in disordered menstruation; and both in ancient and modern days it has been regarded a powerful emmenagogue; indeed its influence over the sexual organs has caused it frequently to be administered both in satyriasis and nymphomania. It is moreover said to be anthelmintic, and the success which different observers attribute to it against worms, especially ascarides, appear well authenticated, and ought to engage the attention of practitioners. " Externally the fresh leaves have been applied to the temples for headaches, and to relieve deep-seated pain. A decoction of it in wine, used as a gargle, is a good remedy for a scorbutic state of the gums and carious teeth." †

Rue may be taken in substance in the proportion of from ten to forty grains, or in the form of an infusion.

INFUSION OF RUE.

Take of Rue, dried	one ounce;
Boiling water	two pints.

Infuse for half an hour and strain.—Dose, one to three ounces every four or six hours.

CONFECTION OF RUE ‡.

Take of Rue, dried	of each an ounce and a half;
Carraway seeds	
Bay berries	
Sagapenum	half an ounce;
Black pepper	two drachms;
Honey	sixteen ounces.

Rub the dry ingredients together to a very fine powder and preserve them. As often as the confection is to be used add the honey, and mix them well.

Employed chiefly in clysters for children labouring under convulsions, abdominal spasms, flatulent colic, &c. From a scruple to a drachm or more, to half a pint of gruel should be used.

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* Cullen, Mat. Med. vol. ii. p. 365.

† Waller's Brit. Dom. Herb. p. 296.

‡ Pharmacopœia Londinensis, 1836.

CLVIII.

CROCUS SATIVUS.

Saffron, or Saffron Crocus.

Class III. TRIANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. IRIDEÆ.

GEN. CHAR. *Perianth* coloured; tube very long; limb deeply divided into six equal segments. *Stigmas* three-lobed, plaited.

SPEC. CHAR. Stigma in three deep linear divisions, protruded, drooping.

SYNONYMES.

Greek	κροκος.
Latin.	Crocus sativus. *Bauh. Pin.* 65. Crocus. *Ger. Em.* 151. *Raii Hist.* 374 *Fuch. Hist.* 441. *Dod. Pempt.* 213. Crocus verus sativus autumnalis. *Park. Parad.* 167. Crocus autumnalis. *Eng. Fl.* i. p. 46. Crocus sativus. *Lin. Sp. Pl.* 54. *Eng. Bot.* t. 343. *Redouté Liliac.* iii. t. 173.
French. ..	Safran.
Italian	Zafferano.
Spanish. ..	Azafran.
Portuguese.	Acafrao.
German. ..	Saffran; Safran.
Dutch	Saffran.
Danish	Safran.
Swedish. ..	Saffran.
Polish	Szafran.
Russ	Schafran.
Hebrew....	Karkom.
Persian. ..	Abir.
Arabic	Zafran; Zahafaran.
Malay. ...	Safaron.
Hindoost...	Keysur.
Cyngalese. .	Khohun.
Tamool. ..	Khungumapu.

Description.—The root consists of several long descending fibres, proceeding from the base of a roundish sub-compressed bulb or *cormus*, about the size of a nutmeg, covered with a coarse brown reticulated cuticle or skin. The leaves proceed immediately from the bulb, and are enveloped below in a thin membranous sheath, opening on one side; they are numerous, linear, acute, several inches in length, somewhat curved towards the summit, of a deep green colour, with a longitudinal furrow, and a white central stripe. The flowers proceed from amongst the leaves upon a very short scape. The perianth is large, purple or lilac coloured, and resembles a corolla, consisting of a long slender whitish tube, and a campanulate limb of six deep, ovate-elliptical segments. The stamens are three, erect, shorter than the corolla, tipped with sagittate pale yellow anthers. The germen is roundish, situated at the bottom of the tube, with a long filiform style, terminated by a trifid stigma, each of the segments somewhat dilated upwards, incised or crenate at the end, drooping and protruding between the segments of the corolla, and of a deep orange colour and fragrant odour. The capsule[*] is ovate, trigonal, with three valves, and three cells, containing many seeds. Plate 40, fig. 1, (*a*) single petal and stamen; (*b*) style and stigma; (*c*) capsule; (*d*) transverse section of the same; (*e*) seed.

Saffron Crocus is found, apparently wild, in some parts of the south of Europe, as Italy and Sicily; but its native region is undoubtedly the East, where it was renowned for its medicinal powers long before its introduction to Europe. Its English localities are only in the vicinity of those places where it has been cultivated. The flowers appear in October, shortly after the leaves.

The Latin *Crocus*, the Greek κροκος, and the various synonymes in the modern languages, originate in the Arabic name of the plant, *Zahafran*, or *Sapharan*. Saffron was evidently familiar to Theophrastus[†], Dioscorides[‡], Galen, and other writers of antiquity; it is one of the plants mentioned as growing in the garden described by Solomon*. Homer† introduces it as one of the flowers that formed the couch of Jupiter and his consort; and he represents Aurora coming forth with her saffron-coloured robe to scatter light upon the earth. Virgil more than once repeats the line,

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[*] The fruit is seldom perfected, as the plant increases chiefly by the bulbs.

[†] Hist. lib. vi. c. 6.

[‡] Mat. Med. lib. i. c. 25.

> "Tithoni croceum linquens aurora cubile."
> *Georg.* i. v. 447 et *Æn.* iv. v. 585.

He also speaks of "saffron-odours:"—

> —— "Nonne vides, croceos ut Tmolus odores,
> India mittit ebur, molles sua thura Sabœi?"

and mentions Crocus as one of the flowers on which bees love to feed:—

> —— "Pascuntur et arbusta passim,
> Et glaucas salices, cassiamque, crocumque rubentem."

Tmolus was a mountain of Phrygia, celebrated for its saffron, as was that which grew in Cilicia, on a mountain called Corycus. Pliny‡ states, that the wine in which saffron had been macerated, was used to sprinkle in theatres, on account of its fragrant odour. Lucretius § adverts to this custom:—

> "Et cum scena croco Cilici perfusa recens est."

Some writers imagine that saffron was an ingredient in the famous *Nepenthes* of Homer. It was fabled that *Crocus*, a beautiful youth, being consumed with his passion for a maiden named *Smilax*, was changed by the gods into the plant which bears his name; a metamorphosis which is commemorated by Ovid.

Three species of Crocus, besides the one above described, are enumerated as belonging to the British Flora, viz., the naked-flowering Crocus (*C. nudiflorus*), distinguished by its erect stigma within the flower, in three deeply lancinated tufted segments, the flowers appearing before the leaves; the least Crocus (*C. minimus*), with the stigma erect within the flower, in three linear, clavate, jagged segments, longer than the stamens; and the purple Spring Crocus (*C. vernus*), having the stigma erect within the flower, and cut into three jagged wedge-shaped lobes. This species is plentiful about Nottingham, and many varieties of it are cultivated in gardens. In the whole of the genus, the germen is situated under ground, almost close to the bulb, while the plant is in flower, but when this decays, it emerges on a slender peduncle, and ripens its seeds above ground; thus nearly resembling the Colchicum, or Meadow-Saffron, whose economy we have already elucidated. The new bulb, or cormus of the Crocus being produced annually on the upper part of the old one, in a short time rises to the surface; unlike the tulip and iris, whose bulbs, being reproduced at the lower part, continue to descend, unless growing on a hard sub-soil.

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* Cant. iv. 14.

† Iliad. lib. xiv. 346. See also his Hymn to Pan, v. 25.

‡ Hist. lib. i. c. 6.

§ Lib. ii.

Saffron Crocus is said to have been first brought to England in the time of Edward III., and introduced by a Sir Thomas Smith, to the neighbourhood of Walden, in Essex, which was hence called Saffron Walden. The cultivation of the plant is now confined to a few parishes in the vicinity of Saffron Walden and Cambridge.

Culture, &c.—" The bulbs are planted in July in a rich light mould with some well-rotted manure, in rows, six inches apart and six inches distant from each other in the rows. About the 18th of September the leaves begin to appear in small pencil-like tufts, and during and after the period of flowering, keep growing and gradually cover the whole bed, continuing green all the winter, until May, when they die away, and the bed is bare all the next summer. The flowers begin to spring up about the 3d of October, with a stem about an inch above the ground; they continue daily coming up for three or four weeks; six or eight or more rising in succession from one plant. They are gathered every morning during the time of flowering, and the stigmata with part of the style plucked out for use, the rest of the flower being thrown away. The saffron thus procured is either dried in a room, in the sun, on papers, or made into cakes by a moderate heat and pressure. At the end of three years, when the leaf is entirely dead, the bulbs are taken up and cleaned, and the largest set by for planting again. The increase in the bulbs is very great, but being of no use except for replanting, what are not wanted for that purpose are thrown away; and as the produce of the saffron does not repay the expense, it is now entirely out of cultivation as an article of commerce." *

General Uses.—We have already mentioned that the ancients employed saffron as a perfume in their temples, theatres, and at their public festivals. It is much used in the south of Europe, and particularly in

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* Mr. Fiske, in Stephenson and Churchill's Botany, Art. ci.

Spain, for colouring bread, cakes, rice, sauces, and other culinary articles. Confectioners use it for colouring or flavouring creams, conserves, liqueurs, ices, &c. Dyers employ it to procure various shades of yellow, and painters add it to different varnishes.

QUALITIES.—The stigmata are the only part of this plant used medicinally. Saffron has a strong, penetrating, diffusive, tenacious odour, agreeable in the first instance, but soon fatiguing; a warm, pungent, aromatic and bitterish taste; and a rich, deep orange-red colour. It yields its colour and active ingredients in great measure to water, wine, vinegar, rectified spirit, and in a less degree to ether; but much of its flavour remains in the extracts. Its active principle appears to reside in an essential oil, which is obtained by distillation with water: this oil is heavy, of a golden yellow colour, fragrant and pungent, and is said to be procured in the proportion of four scruples to sixteen ounces of saffron. The watery infusion is of a deep golden colour, and when much concentrated is rendered deep purple by strong sulphuric acid, has the smell of vinegar, and yields a copious black precipitate when diluted with water: chlorine produces a copious yellow precipitate, the liquid retaining only a very pale lemon colour. Hence saffron contains chiefly extractive, which Bouillon la Grange and Vogel have proposed to call *polychroite*, on account of the different colours it is capable of assuming. A small portion of this substance yields a fine colour to a great quantity of water, but the colour is destroyed by chlorine and the solar rays; sulphuric acid changes it blue, and nitric acid green. It is obtained by evaporating a watery infusion of saffron to the consistence of honey, which is digested in alcohol, and the solution filtered and evaporated to dryness. According to the analysis of Vogel, 100 parts of saffron afford 65 of *polychroite*, seven of volatile oil, ten of woody fibre, six of gum, besides water, albumen, wax, salts of lime, &c.

ADULTERATIONS.—English saffron is considered the best, and that imported from France and Sicily is preferred to the Spanish, which is usually spoiled with oil, in which it is dipped for the purpose of preserving it. The produce of saffron is very small; fourteen or fifteen flowers affording little more than a grain of the dry substance, so that upwards of 6000 flowers are required to furnish an ounce (Troy). Consequently there are many inducements for adulterating this drug; and as far back as the time of Pliny this was attempted, for he tells us that the way to prove its genuineness is to lay the hand on it, when, if good, it will crack or snap, and if the fingers be then put into the mouth it will cause a stinging sensation in the face and eyes. The modern sophistications are, the petals of safflower (*Carthamus tinctorius*), and common marigold (*Calendula officinalis*), and the fibres of *smoked beef.* The fraud may be detected by infusing a portion of the suspected article in hot water, when, if the petals are present, they will be detected; and if, as is not unfrequently the case, saffron from which a portion of colouring matter has been already extracted be blended with the genuine drug, the infusion will be paler and less odorous than it should be. An unpleasant odour arising when the saffron is thrown upon red hot coals will indicate the presence of the fibres of beef.

Medicinal Properties and Uses.—Emanations from saffron are reputed to act powerfully on the nervous system, causing pain in the head, vertigo, trembling, &c. Borel*, Schenck, and others relate cases of coma and even death from sleeping in rooms containing considerable quantities of this substance. When taken into the stomach, it is asserted to act in the same manner upon the brain and nerves, producing paleness, headache, dimness of sight, and a kind of delirium, attended with fits of immoderate laughter †. Boerhaave and Ettmuller state that it is capable of inducing alarming symptoms, and recommend it to be used with great caution, while they extol its remedial agency. On the other hand, various modern authorities place very little confidence in its effects, or describe it as quite inert. Alexander asserts that he took four scruples of saffron without experiencing any effect. It is certainly unfair that an isolated case should be allowed to outweigh the solemn asservations of so many of the ablest physicians, and it should be remembered that the influence of climate and soil, of culture and preparation, with regard to plants, is sufficient to alter their medicinal qualities altogether. To these must be added the adulterations to which saffron is subject, and the fact that its active principle is so volatile as to be entirely destroyed by long keeping, and even by exposure to the external air for a short period.

These facts, if correct, seem to indicate its resemblance to opium, and justify, to a certain extent, the anodyne, exhilarant, antispasmodic, hypnotic, and other properties ascribed to it. By our illustrious progenitors it was in much esteem; by Hippocrates as an external application for pains and swellings of a rheumatic or gouty kind; Serapion had a great opinion of it in diseases of the chest and uterus; and Galen records its resolutive effects. The majority of authors place it in the first rank of antispasmodics, and have insisted upon its utility in spasmodic diseases, such as hysteria, asthma, chronic coughs, pertussis, nervous vomitings, gouty affections, and consumption. By virtue of its direct excitation on the organs of secretion, and its consecutive sedative effects on the nervous system, it has been likewise advocated by some in dysentery, dysuria, jaundice, and colic. Riverius[*] speaks of its emmenagogue property, and some equally recommend it for exciting suppressed lochia. Ettmuller also regards it as a most powerful but dangerous remedy for promoting the efflux of the menses, and mentions some instances of formidable hæmorrhage resulting from its use. As a diaphoretic, it is said by Murray[†] to bring out the eruption of exanthematous diseases, with which view, indeed, it is a common custom in this country to give a watery infusion of it at the commencement of small-pox and measles.

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* Borel, Hist. et Obs. cent. 4 Obs. 35, p. 303. Schenck, Obs. med. p. 879.

† Zacut. Lusit. apud Fricc. de venenis, p. 394.

Externally it is sometimes employed in ophthalmia and inflammation of the eye-lids, to indolent swellings, ecchymoses, and foul ulcers; but its utility in these affections is very problematical.

Saffron may be taken in substance in doses of ten grains, gradually increased to twenty; but either the infusion, syrup, or tincture may be substituted. If the powder be preferred, a glass of good wine is the best vehicle, especially when taken for lowness of spirits, faintness, lassitude, &c.

INFUSION OF SAFFRON.

Take of Saffron .... two drachms.
Boiling water...... one pint.

Infuse in a slightly covered vessel for a quarter of an hour, and strain. Dose, from one to two ounces every four hours.

SYRUP OF SAFFRON[‡].

Take of Saffron .... ten drachms.
Boiling water ..... one pint.
Lump sugar ...... three pounds.

Macerate the saffron in the water for twelve hours, in a vessel lightly covered; strain the liquor, and add the sugar. An elegant form for exhibiting the medicine to children.

TINCTURE OF SAFFRON[§].

Take of Saffron .... one ounce.
Proof spirit ..... fifteen ounces.

Digest for seven days, and filter. Exhilarant dose, from forty to sixty drops.

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[*] Oper. ed. Horstii, p. 136.

[†] Murray, App. Med. tom. v. p. 234.

[‡] Pharmacopœia Londinensis.

[§] Pharmacopœia Edinburgensis.

CLIX.

SALVIA OFFICINALIS.

Common or Garden Sage.

Class II. Diandria. *Order* I. Monogynia.
Nat. Ord. Labiatæ.

Gen. Char. *Calyx* tubular, two-lipped. *Corolla* labiate, the tube dilated upwards and compressed. *Filaments* with two divaricating branches, one only bearing a perfect anther.

Spec. Char. Leaves lanceolate, ovate, crenulate. Whorls few-flowered. Calyx mucronate, longer than the bracteæ.

SYNONYMES.

Greek	ελελισφακον.
Latin	Salvia major. *Bauh. Pin.* 237. *Ger. Em.* 764. *Park. Parad.* t. 475. *Dod. Pempt.* 288. *Fuchs. Hist.* 281. Salvia. *Cam. Epit.* 475. Salvia officinalis. *Lin. Sp. Pl.* 34. *Scop. Carn.* n. 31.
French	Sauge ; Sauge commun.
Italian	Salvia ; Salvia comune.
Spanish ..	Salvia ; Salvia de botica.
Port.	Salva ; Salvetta.
German ..	Salbei ; Salvei ; Gartensalbie.
Dutch	Salie.
Danish	Salvie.
Swedish ..	Salvia.
Polish	Szalevia.
Russ.	Schalweja.

Description.—The root is perennial, long, and fibrous. The stem is erect, much branched, shrubby, nearly quadrangular, and about two feet in height; the younger branches whitish and downy. The leaves are opposite, ovate-lanceolate, or elliptical, thick, wrinkled above, reticulated with prominent nerves beneath, crenulate at the margin, of a deep dull green above, whitish beneath, sometimes tinged with purple; the petioles are shorter towards the top of the stem. The flowers are united three or four together, in axillary, opposite verticillastri, with ovate, mucronate, caducous bracteæ at the base, forming a kind of lax terminal spike. The calyx is campanulate, turbinate, striated, rather woolly, two-lipped, the upper lip three cleft, the lower bifid, rather larger; the segments acute, mucronate, often purplish. The corolla is large, of a light blueish purple, ringent; tube subquadrangular, ventricose above; upper lip galeate, erect, emarginate; lower lip three-lobed, the middle lobe larger, obcordate, crenulate, emarginate. The stamens are two, with their filaments curved and affixed transversely by the middle, each to a short pedicel, with a fertile anther at one extremity, and an abortive anther at the other; the fertile anthers are one-celled, linear-oblong, and concealed in the upper lip *. The germen is seated on a prominent purplish disk, and is deeply four-lobed, greenish, obtuse, supporting a long filiform, whitish, incurved style, and a bifid acute stigma. The fruit consists of four roundish achenia inclosed in the calyx. Plate 40, fig. 2, (*a*) calyx and pistil; (*b*) corolla opened to show the stamen; (*c*) stamen, showing the filament, connectivum, and anthers; (*d*) fruit; (*e*) pistil.

Common Sage is a native of the South of Europe, and has been much cultivated in our gardens, for an unknown period. It flowers in June and July.

The generic name is derived from *salvere, to be well,* in reference to the medical properties of the plant. Dioscorides describes it by the name of ελελισφακον; and by some it is considered the σφακελος of Theophrastus.

The genus includes several ornamental plants, for the characters of which we must refer to works on general botany. A variety of the *S. officinalis,* or according to Vahl, a distinct species, called by him *S. lavandulifolia,*—the *Salvia minor,* small Sage, or Sage of Virtue, of the old authors,—is sometimes cultivated, and is said to be preferable to the common garden kind. There are several other varieties, but they differ very little in medical properties. For medicinal use, those plants which grow in dry stony places are to be preferred. Hill thinks that the ancients employed the flowering tops gathered just before the expansion of the corolla, at which time the calyces are more fragrant and balsamic, and consequently more energetic than the leaves. It should be dried quickly in the shade, and preserved in close vessels.

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* In the throat of the corolla are also the rudiments of two abortive stamens; showing the affinity of the genus *Salvia* to the plants of the class Didynamia.

The use of sage as a culinary herb is very familiar: its bitterness and aroma enabling the stomach to digest the fat and luscious meats and sauces with which it is associated. It is said, but without much appearance of truth, that the Chinese are as fond of sage as we are of their teas, and that the Dutch once carried on a profitable trade by exchanging one pound of sage leaves for three of tea *. The once credited story of the toad communicating a poisonous quality to this plant, deserves to be ranked with the wildest fables †; since, however, the leaves, from their glutinous character, are apt to collect dust and insects, it is advisable to cleanse them before they are used.

Qualities.—Sage has a strong aromatic, peculiar odour, which is most agreeable in the flowers, and a warm, aromatic, bitterish, and sub-astringent taste. These qualities depend on an essential oil which is obtained in distillation with water, and is powerfully fragrant, warm, and pungent, when recent of a fine green colour, turning yellow or brown with age. Rectified spirit appears to take up its aromatic virtues by infusion better than water. The aqueous infusion takes a deep black colour by the addition of sulphate of iron. Hence its chief constituents appear to be volatile oil, camphor, extractive matter, and a little tannin.

Medicinal Properties and Uses.—Sage is possessed of bitter and aromatic properties, hence it is stomachic, cordial, nervine, and corroborant. It is capable of raising the tone of the stomach, facilitating digestion, accelerating the general circulation, and of exciting uterine action; nevertheless these effects are only beneficial in subjects of debility and atony, in persons of leucophlegmatic temperament and exempt from inflammation. "It may be reckoned amongst the first of nervous remedies; by which we mean that it is peculiarly adapted to that class of diseases, a very numerous one, known to modern medicine by the name of *Neuroses*, because they originate in a derangement of the nervous functions; of these the principal are apoplexy, paralysis, epilepsy, vertigo, hysteria, and convulsions of various kinds. It is calculated to remedy that defect in the digestive organs from which these formidable diseases take their origin."* Sage is also lauded in trembling of the limbs, obstruction of the menses, fluor albus, gout and rheumatism, and various other disorders†. As a diaphoretic, it has been given, and with apparent benefit, in the commencement of some intermittent fevers‡; as a corroborant to check excessive nocturnal perspiration, and other abundant evacuations which weaken and fatigue patients labouring under chronic complaints§; and as an alexiterial in pestilential and contagious diseases‖; but it does harm in consumption, inducing great heat and dryness¶. Van Swieten eulogises it for lessening the overflow of milk at the time of weaning. The decoction, in the form of gargle, is beneficial in cleansing ulcers of the mouth, dissipating fungous enlargement of the gums, whether scorbutic or not, and for relieving aphthæ.

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* Vide Bomare, in Dict. d'Hist. Nat. tom. vi. p. 645, et Boerhaave, in Hist. Pl. Hort. L. B., P. i. 234.

† See Ambr. Par. p. 596. Hooke, Micrographia, p. 124.

Externally, in bags or in fomentations, it is a popular topical application for bruises, local œdema, tumours, and atonic swellings.

An elegant water and spirit may be distilled from Sage, but its bitterness and astringency are best obtained by a watery infusion, which is made in the usual manner; this, with the addition of lemon-juice, is a useful drink in febrile complaints. The dose of the essential oil is from two to ten drops.

WINE OF SAGE.

Take of fresh Sage	one ounce.
White wine	one pint.
Cloves	one drachm.

Macerate for fourteen days, and filter.—Dose, from half an ounce to two ounces.

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* Waller, Brit. Dom. Herb. p. 303.

† It is thus extolled by the Schola Salernitana:—

"Cur moriatur homo cui salvia crescit in horto?
Contra vim mortis non est medicamen in hortis.
Salvia confortat nervos, manuumque tremorem
Tollit: et ejus ope febris acuta fugit.

* * * * * *

Salvia salvatrix naturæ conciliatrix.
Salvia cum rutâ faciunt tibi pocula tuta."

Schola Salern. cap. 38. p. 406.

‡ Kalm's Resa, tom. ii. p. 354.

§ Van Swieten, Comment. tom. ii. p. 370.

‖ Chenot de Peste, p. 136.

¶ Quarin, Animadvers. pract. p. 92.

CLX.

ERYSIMUM ALLIARIA.

Sauce alone, or Jack by the Hedge.

Class XV. TETRADYNAMIA.—*Order* II. SILIQUOSA.

Nat. Ord. CRUCIFERÆ.

GEN. CHAR. *Pod* four-sided. *Seeds* not margined. *Cotyledons* incumbent. *Stigma* capitate, sometimes emarginate. *Calyx* erect.

SPEC. CHAR. Leaves cordate, stalked, sinuato-dentate.

SYNONYMES.

Latin	Alliaria. *Bauh. Pin.* 110. *Ger. Em.* 794. *Park. Theatr.* 112. *Raii Syn.* 165. *Cam. Epit.* 589. *Dod. Pempt.* 674. *Fuch. Hist.* 104. Hesperis allium redolens. *Tourn. Paris.* 200. *Dill. ap Raii Syn.* 293. Sisymbrium Alliaria. *Scop. Carn.* ed. ii. n. 825. Erysimum Alliaria. *Lin. Sp. Pl.* 922. *Eng. Fl.* iii. p. 201. *Eng. Bot.* t. 796.
French	Alliare.
Italian	Aliaria.
German ..	Knoblauchkraut; Lauchel; Gernsel; Salsekraut.
Dutch	Kpoflockruid; Look zonder look.
Danish	Hvidlogsurt.
Swedish ...	Hvitloksort.

DESCRIPTION.—The root is biennial, whitish, tapering and fibrous. The stem is erect, simple, or slightly branched, cylindrical, smooth, obsoletely channelled, and rises to the height of two or three feet. The leaves are alternate, petiolate, cordate, unequally toothed and sinuate at the margin, veiny, glabrous on both sides; those at the base of the stem are more obtuse, reniform, and supported on longer petioles. The flowers are small, sustained on short peduncles, and form a terminal corymbose raceme. The calyx consists of four ovate-lanceolate, concave, connivent, pale green sepals. The corolla is cruciform, of four white obovate petals, with short erect claws. The stamens are tetradynamous, with subulate filaments, supporting yellow, oblong, incumbent anthers; there is a gland between each pair of longer stamens and the calyx, and one surrounding the base of each shorter stamen. The germen is long, tetragonal, crowned with a capitate truncate stigma. The fruit is a pod, or silique, nearly two inches in length, slender, prismatic, with prominent nerves; two-valved, two-celled, containing many oblong, brown, shining seeds. Plate 40, fig. 4, (*a*) entire flower magnified; (*b*) calyx; (*c*) stamens and pistil; (*d*) transverse section of the pod; (*e*) pod or silique, natural size.

This plant is very common in Britain, and throughout Europe, under hedges, on the banks of ditches, and in coppices, flowering from May to the middle of June.

The generic name, Erysimum, is derived from ερυω, *to cure*, alluding to the reputed qualities of the plants which it designates. Alliaria is a derivative of *allium*, *garlic*, referring to the odour of the species; hence also, the common names, *Sauce alone*, and *garlic treacle-mustard*. Jack by the Hedge is another of its provincial synonymes.

General Uses.—This plant is eaten as a salad, or pot-herb, and as an ingredient in sauces. Mr. Neil observes, that "when gathered as it approaches the flowering state, boiled separately, and then eaten to boiled mutton, it forms a most desirable pot-herb, and to any kind of salted meat an excellent green." In Wales it is used as a frying herb. According to Bautsch it is useful in the process of tanning. From the Swedish experiments, it appears that cows and goats eat the foliage; but horses, swine, and sheep refuse it. When devoured by cows, it imparts a strong alliaceous taste to the milk, and if eaten by poultry, it imparts to their flesh, and as some assert, even to their eggs, a disagreeable rank taste.

Qualities.—The leaves, as before mentioned, have much of the odour and flavour of garlic, with a slight bitterness. These qualities are almost destroyed in drying. The aqueous infusion is nearly colourless, transparent, subacrid, and bitterish, takes a brownish hue with sulphate of iron, but does not affect turnsol or litmus paper. "The juice expressed from the fresh leaves is strongly impregnated with their active matter, but loses the greater part on being inspissated to an extract with the gentlest warmth: in its liquid state, duly secured from the air, it may be kept uninjured for many months. On distilling the fresh herb with water, there arises a small portion of essential oil, which has a very powerful taste and odour."*

MEDICINAL PROPERTIES AND USES.—If the ancients were too profuse in their praises of this plant, the moderns have far too much neglected it. Taken internally in any considerable quantity it frequently excites perspiration, which is impregnated with its garlic-like smell. It stands recommended as a very powerful diuretic and diaphoretic, and as a deobstruent in asthmatic disorders; as also, in colic, flatulencies, and nephritic complaints. That it is also possessed of antiscorbutic virtues is certain, since from the multiplied observations of Fabricius Hildanus†, Camerarius, Chomel‡, and Boerhaave§, the leaves bruised or the juice applied to foul, gangrenous, and cancerous ulcers, has determined favourable suppuration, or evident amelioration, and even cure. Combined with vinegar or wine it becomes antiseptic.

The dose of Sauce alone is not determined; it may be used like scurvy-grass and water-cress.

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* Lewis, Mat. Med. p. 26.

† Cent. 2 Obs. 94, in *Oper.* p. 172.

‡ Pl. Usuelles, tom. ii. p. 378.

§ Hist. Pl. tom. ii. p. 473.

CLXI.

COCHLEARIA OFFICINALIS.

Common Scurvy-grass.

Class XV. Tetradynamia.—*Order* I. Siliculosa.

Nat. Ord. Cruciferæ.

Gen. Char. See Horse-radish (*Cochlearia Armoracia*).

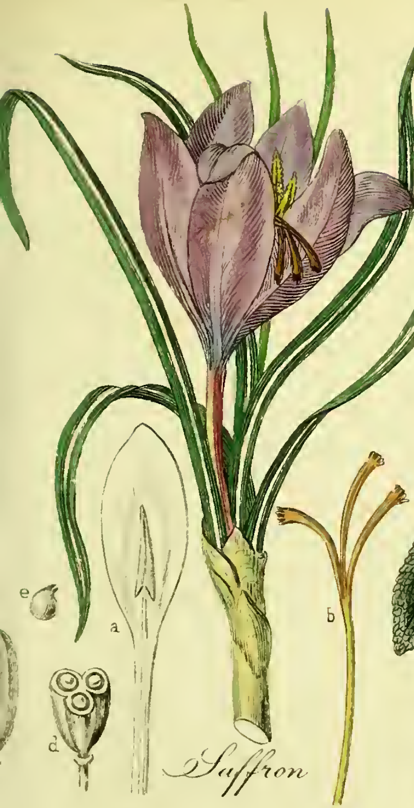
Spec. Char. Silicles globose. Radical leaves petiolate, cordate-reniform; cauline ones sessile, ovate, sinuated.

SYNONYMES.

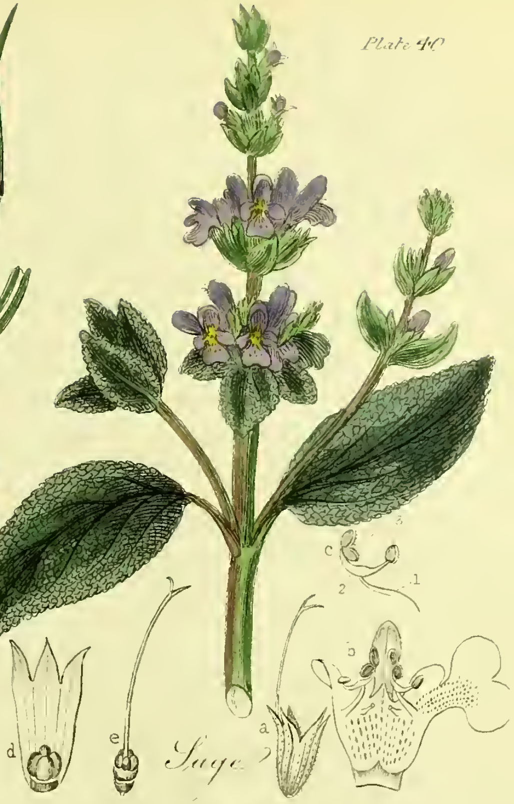
Latin	Cochlearia folia subrotundo. *Bauh. Pin.* 110. Cochlearia rotundifolia. *Ger. Em.* 401. Cochlearia major rotundifolia, sive batavorum. *Park. Theatr.* 285. Cochlearia. *Raii Hist.* 822; *Syn.* 302. *Cam. Epit.* 271. *Dod. Pempt.* 583. Cochlearia officinalis. *Lin. Sp. Pl.* 903. *Eng. Fl.* iii. p. 174. *Eng. Bot.* t. 351.
French....	Cochlearia; Herbe aux cuillers.
Ital. Span. & Port..	Coclearia.
German ..	Löffelkraut; Löffelkresse; Scharbockskraut.
Dutch	Lepelkruid; Lepelblad.
Danish....	Skeeurt.
Swedish ...	Skedœrt.
Polish	Warzechwa.

Description.—The root is annual, elongated, whitish, and beset with numerous capillary fibres. The stems are several, feeble, somewhat procumbent below, then erect, slightly branched, somewhat angular, glabrous, attaining the height of six or eight inches. The radical leaves are numerous, cordate-reniform, obtuse, entire or angular, slightly concave, and are supported on long petioles; the cauline ones are smaller, ovate, spatulate, toothed, on short petioles, the uppermost sessile, sub-

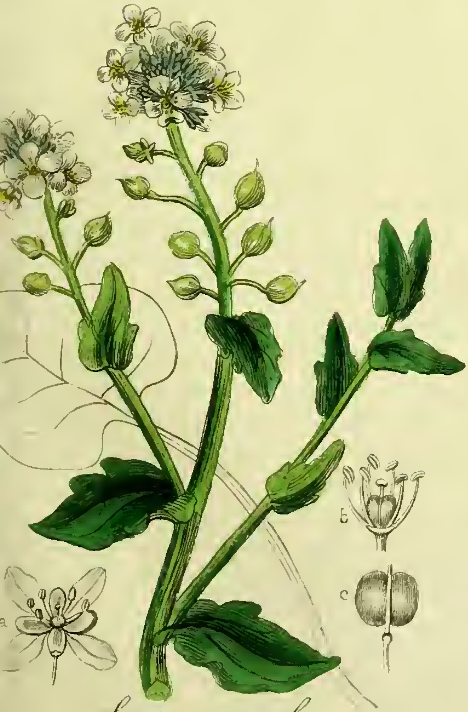
Plate 40



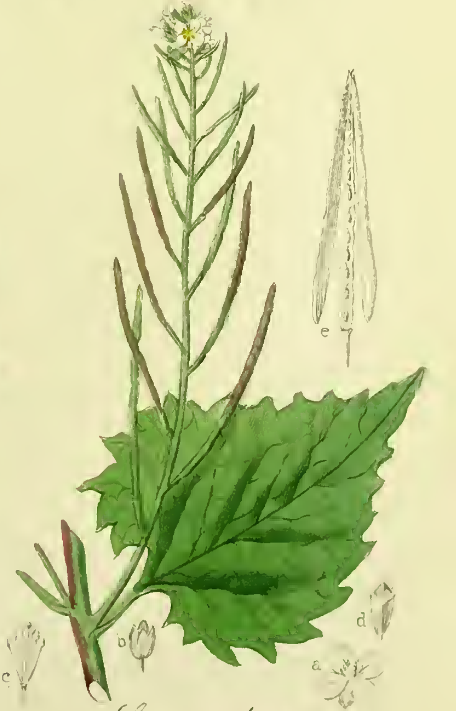
Saffron



Sage



Scurvy-graſs



Sauce-alone

incised, amplexicaul by their toothed bases; they are all glabrous and succulent. The flowers are arranged in clusters forming a terminal raceme. The calyx consists of four lax, ovate, obtuse, concave, deciduous sepals, white at the margin. The corolla is cruciform, white, twice the size of the calyx. The stamens are tetradynamous, with greenish, subulate, incurved filaments, supporting yellow, oblong anthers; there are four minute green glands between the filaments. The germen is ovate, compressed, supporting a short persistent style and capitate stigma. The fruit is a globose silicle or pouch, half as long as the pedicel, obscurely veined, with two thick ventricose valves, and two cells, containing two blackish brown seeds. Plate 40, fig. 3, (*a*) entire flower magnified; (*b*) stamens and pistil; (*c*) fruit or silicle.

Common Scurvy-grass is found abundantly in most parts of northern Europe and in Britain, on the sea-coast in stony or muddy localities, and in some alpine situations far inland. It flowers in April and May.

The generic name, from *cochlear, a spoon*, refers to the shape of the leaves, which resemble the bowl of an old fashioned spoon. Gerard says, this plant is also called in English, Spoonwort and Scruby-grass. Some imagine that it is the *Telephium* and *Herba Britannica* of the ancients.

Scurvy-grass is cultivated by sowing the seeds in July, in drills eight inches apart, and when the plants are up, they are thinned to six inches apart. In the following spring the leaves will be ready for use.

Qualities and General Uses.—This plant is sometimes eaten as a salad. In Iceland they make various dishes of it with acidulated milk, whey, or beer; they also prepare a pickle by placing it in layers with salt and various aromatics. It is said to impart to the flesh of animals that feed on it a disagreeable flavour.

The fresh herb has a strong pungent odour when bruised, and a warm, bitter, acrid taste; both which are almost lost in drying. Its chief virtues depend on an essential oil *, separating in very small quantities by distillation with water and rectified spirit. In the process of distillation it affords sulphuretted hydrogen gas. It yields its active matter by maceration, both in water and spirit, most perfectly in the latter. As it is extremely volatile, decoctions are improper, extracts are effête, and any preparation of the dried plant is almost inert. The fresh leaves beaten into a conserve, and the depurated and strained juice, may be kept for some time in close vessels, without much diminution of their qualities. The volatile oil and the distilled spirit may also be preserved in well-stopped bottles.

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* The oil is very ponderous, and has a very subtile penetrating volatile odour. "One drop dissolved in spirit, or received on sugar, communicates to a quart of wine or other liquor the smell and taste of Scurvy-grass."—Lewis, *Mat. Med.* p. 221.

Medicinal Properties and Uses.—That Scurvy-grass is entitled to be ranked high in the order of anti-scorbutics, is demonstrated by the observation of numerous authors*, who state that sailors after a long sea voyage become grievously scorbutic, and that they are soon cured by a plentiful supply of this and other similar plants. In addition to the property alluded to, Scurvy-grass is stimulant, antiseptic, aperitive, incisive, diuretic, and emmenagogue. It is given in atonic engorgements of the abdominal viscera, in dropsies accompanied by relaxation, in hypochondriasis, paralysis, scrofula, and leucorrhœa; and Desbois † states that he had known it to succeed in urinary calculi. It is likewise employed in chronic affections of the stomach and lungs, and for the œdema and cachexia which not infrequently supervene to mucous and intermittent fevers. As an emmenagogue it may be given with confidence to women with flaccid and colourless skin, and in whom the amenorrhæa is the result of general or local debility. In the wandering rheumatism, called by Sydenham ‡ "rheumatismus scorbuticus," consisting of wandering pains of long continuance, accompanied with fever, an electuary of scurvy grass, &c., is highly commended by that judicious physician. To the list of diseases in which this herb is exhibited, we may also add, that it may sometimes be advantageously employed in chronic rheumatism, chronic pulmonary catarrh, and various skin diseases.

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* "We have testimony of its great use in scurvy, not only from physicians, but navigators, as Anson, Linschoten, Maartens, Egede, and others. And it has been justly noticed, that this plant grows most plentifully in those high altitudes, where the scurvy is most obnoxious. Forster found it in great abundance in the islands of the South Sea."—*Woodville's Medical Botany*, vol. i. p. 87.

† Desbois, ex Flore Medicale, tom. iii. p. 56.

‡ Opera, p. 278.

"A remarkably volatile and pungent spirit, prepared from this herb, and known by the name of *spiritus antiscorbuticus s. mistura simplex antiscorbutica Drawizii* was found by Werlhof[*] to be a useful remedy in paralysis and other diseases requiring an active and powerful stimulant;"[†] and Cullen[‡] considers that the same or a similar preparation, might not only be of service in paralytic cases, but might also be employed as a diuretic.

Externally, the juice is applied to atonic ulcers, aphthæ, and to ill-favoured eruptions; the leaves as a masticatory for swollen and scorbutic gums.

The best and most efficient form of exhibiting this and all antiscorbutic vegetables, is the recently expressed juice, of which several ounces should be taken during the day; or when the fresh plant cannot be procured, the juice should be made into a syrup. It is often advisable to add lemon juice, or the juice of other antiscorbutic plants, such as water-cress, brooklime, &c.

SYDENHAM'S ELECTUARY.

Take of fresh Conserve of Scurvy-grass .. two ounces.
Conserve of Woodsorrel .... one ounce.
Compound Powder of Arum ..... two drachms.

Mix them together with a sufficient quantity of syrup of orange peel to form an electuary.—Dose, two drachms, three times a day.

SPIRIT OF SCURVY-GRASS[§].

Take of Scurvy-grass .... six parts.
Alcohol .... four parts.
Water .... one part.

Distil one part and a half.—Dose, from one to two drachms.

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[*] Obs. de Febr. p. 165.

[†] Woodville, l. c.

[‡] Cullen, Mat. Med. vol. ii. p. 165.

[§] Pharmacopœia Wirtembergica.

CLXII.

PRUNUS SPINOSA.

Sloe, or Blackthorn.

Class XII. Icosandria.—*Order* I. Monogynia.

Nat. Ord. Rosaceæ.

Gen. Char. *Calyx* five-cleft. *Petals* five. *Drupe* with a hard smooth nut.

Spec. Char. Branches spinose. Peduncles solitary. Leaves elliptic-lanceolate or ovate, somewhat downy beneath.

SYNONYMES.

Latin	Prunus sylvestris. *Bauh. Pin.* 444. *Ger. Em.* 1497. *Raii Syn.* 462. *Park. Theatr.* 1033. *Dod. Pempt.* 741. *Fuchs. Hist.* 396. c. 154. Prunus spinosa. *Lin. Sp. Pl.* 681. *Eng. Fl.* ii. p. 357. *Eng. Bot.* t. 842.
French	Prunier sauvage; Prunier epineux; Prunellier.
Italian	Prugnolo.
Spanish	Endrino; Ciruelo silvestre.
German	Schlehdorn; Schlehendorn.
Dutch	Sleedoorn; Sleepruim.
Danish	Slaetorn; Kreygebœrtorn.
Swedish ...	Sloan; Starkbar.

Description.—The root is woody, branched, and wide-spreading. The stem is arborescent, from six to ten feet in height, sending off crooked very spinous branches; the bark when old is purplish brown, ash-coloured or greyish on the young twigs. The leaves are ovate-lanceolate or elliptic, cuneiform at the base, petiolate, minutely and sharply serrated, smooth and dark green above, slightly pubescent, as are the petioles, convolute when young. The flowers are mostly solitary on the young twigs, on short naked peduncles, and appear before the leaves. The calyx is campanulate, with a limb divided into five ovate-oblong, rather concave, spreading segments, longer than the tube. The petals are snow-white, ovate-elliptical, obtuse, spreading, and inserted into the calyx by slender claws. The stamens are numerous, with subulate, spreading, white filaments inserted into the calyx, tipped with ovate, didymous, orange-coloured anthers. The germen is ovate-globose, small, glabrous, supporting a slender style the length of the stamens, terminated by an orbicular stigma. The fruit is a small drupe, sub-globose, glabrous, dark purple, covered with bloom, containing an ovate, compressed, slightly furrowed nut, within which is the oblong nucleus or kernel. Plate 41, fig. 1, (*a*) entire flower, natural size.

This plant is a native of Europe and America, and is frequent in hedges and coppices in this country ; its pure white blossoms appearing in general before the leaves, in April.

The genus derives its name from the Greek προυνη, but its origin is unknown. The προυνη αγριη of Dioscorides appears identical with our sloe. The specific name refers, of course, to the spines with which the branches are armed *. Sloe, in Saxon ꞅla, is called *Blackthorn*, to distinguish it from the Whitethorn or Hawthorn, which its blossoms somewhat resemble, though they appear earlier. Blackthorn appears to be rather a modern term, as it is not mentioned by Gerard. The bush is sometimes called provincially *Scroggs*. The French call the fruit or sloes, *prunelles*.

The Sloe is by far the most common wild species of Prunus, in Britain, the Wild Bullace (*P. insititia*), however, is not uncommon in some districts. This is distinguished by its larger size, ovate-lanceolate leaves, downy beneath, two flowered peduncles and larger globose fruit of a black or yellowish hue, to which may be added the later appearance of its flowers, in May, when the leaves are nearly expanded. It is considered the original stock of the *P. domestica*, and consequently of all the fine garden varieties of the Plum. The Wild Cherry (*Prunus*

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* Virgil probably refers to the Sloe in his 4th Georgic,—

> "Ille etiam seras in versum distulit ulmos,
> Eduramque pyrum, et spinos jam pruna ferentes."

Cerasus, Lin.; *Cerasus avium*, De Cand.,) is found in woods and hedges flowering in May; and the Bird Cherry (*Prunus Padus*, Lin.; *Cerasus Padus,* De Cand.,) occurs in woods and coppices, especially in the north of England.

General Uses.—The Sloe is ornamental in shrubberies, as it flowers earlier than most other plants : it makes excellent hedges and other fences, but its roots are apt to spread wide and encroach upon the pastures. The wood being hard and tough is used for turnery-ware, teeth of rakes, and walking sticks. The bark stripped off in spring, boiled in ley, affords a red dye ; it is also useful, according to Bechstein, to prevent rottenness in cheese, and may be employed in tanning leather. The young leaves form one of the most popular substitutes for the China teas ; but their astringency being considerable, they are mixed with the leaves of ash, whitethorn, elder, &c. *

The fruit, gathered when fully ripe, and mellowed by the first frosts, is made into a pleasant wine, especially if the stones are broken and the kernels mixed with the juice; it is also a useful addition to other wines, such as currant, raisin, and elderberry. In a less advanced stage sloes are used by fraudulent dealers to adulterate port wine, for which purpose they are well adapted on account of the astringency, slight acidity, and deep red colour they impart. The juice of the fruit makes a good marking-ink for linen or woollen cloth, and if sulphate of iron (green vitriol) be added, it becomes permanently black, affording it is said a writing-ink superior to that made from galls, and an excellent dye for linens, &c. " The dried sloes dye linen of a reddish colour, which, on repeated washings, changes to a durable light blue." The leaves of the Blackthorn are eaten by horses, goats, and sheep, and the bark is relished by hares, deer, and some other quadrupeds. Unpleasant effects are sometimes produced by the punctures of the thorns, and Dr. Withering thinks, from some cases that have fallen under his notice, that these spines secrete a poisonous matter, especially in autumn.

Qualities.—The bark is inodorous, has a bitterish and styptic taste which it imparts to water and spirit. The recent flowers have a pleasant odour, and a slightly bitter taste, resembling that of bitter almonds. The pulp of the fruit is inodorous, and has an acid austere flavour, very harsh and ungrateful before it is mellowed by frosts ; the kernel has the pleasant bitterish taste which prevails throughout the natural family to which the plant belongs, and which is owing to the presence of a volatile oil combined probably with a minute portion of prussic acid. The juice of the pulp is so viscid that it can scarcely be expressed without the aid of water. The expressed juice of the unripe fruit, inspissated by a gentle heat to dryness, is called *German Acacia*, and has been usually sold in the shops for the Egyptian acacia, from which it differs in being harder, heavier, darker coloured, of a sharper taste, and more especially in imparting its astringency in a great measure to rectified spirit as well as water.

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* It appears from a parliamentary inquiry that four million pounds of this spurious compound, under the name of " prepared British leaf," were a few years since manufactured annually in this country, the greater part of which was bought up by fraudulent dealers for the purpose of adulterating the foreign tea. The leaves are said to be prepared by first scalding or boiling them in water, to which logwood is sometimes added, and then drying and rolling them together in the manner of the foreign tea; the green colour is imparted by Dutch pink or verditer.

Medicinal Properties and Uses.—The Sloe, though not allowed a place in the British, is nevertheless admitted into several continental pharmacopœias. The parts used are the flowers, fruit, bark, and root. The flowers are slightly laxative, anthelmintic, and anti-nephritic. Bauhin [*] and Hoffmann speak of them, infused in water, or whey, weak wine, or beer, as a popular laxative; and Lewis [†] considers the infusion or syrup to be especially calculated for children. The fruit was employed for its styptic property in the time of Dioscorides [‡], and as its astringency is modified by a refrigerant quality, it may be used in diarrhœas and hæmorrhages, and in the form of gargles to catarrhal affections of the uvula, tonsils, and gums. Dr. Cullen [§] says he has often found sloes to constitute an agreeable and useful astringent. According to Coste, Willemet, and Nebelius [||], the bark is decidedly febrifuge, and from experiments made by them, proved effective in the cure of intermittents: the doses in which the powder was exhibited varied from one to two drachms. An extract of the bark may be employed as a substitute for those made from the Peruvian barks. The leaves possess similar properties to the bark, but in a less degree. Lastly, the root, or rather bark of the root, was advised in asthma [¶], and Kramer [**] relates a case, the result of one among other trials, in which it caused the expulsion of an urinary calculus, of the size of a bean, from a boy five years old, but its anthelmintic and anti-asthmatic powers have not been subsequently confirmed. Externally the infusion of the flowers has been considered a useful application to scabies, and the juice of the fruit is a popular remedy for staying hæmorrhage from the nose; as also a strong decoction of the bark. An infusion made with one ounce of the recent flowers to six ounces of boiling water or whey, sweetened with sugar, is an agreeable laxative dose for an adult.

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[*] Bauhin, Hist. Pl. tom. i. p. 196. Fr. Hoffmann, Diss. de præstantia remed. domest. sect. 26.

[†] Lewis, Mat. Med. p. 468.

[‡] Mat. Med. lib. i. cap. 173.

[§] Cullen, Mat. Med. vol. ii. p. 41.

[||] Coste et Willemet, Essais sur quelques plantes indigenes, p. 68. Nebelius in Nat. Cur. vol. v. obs. 116. p. 395, &c.

[¶] Trumpf. in Commerc. Nor. 1741, p. 226.

[**] Kramer in Commerc. Nor. 1735, p. 44.

SYRUP OF SLOE FLOWERS*.

Take of fresh sloe-flowers......two pounds.
boiling water ....four pints.

Infuse for twelve hours; the liquor to be poured upon two pounds of fresh flowers; this to be repeated a third time, and the syrup to be finally made with the strained liquor and four pounds of sugar.

Laxative. Dose, from one to three drachms for children; and from six drachms to an ounce for adults.

When its astringent properties are required, the unripe fruit should be selected, as the sloe, when thoroughly ripe, possesses very little astringency. J. Bauhin states, that unripe sloes dried in an oven, and then fermented with wines or malt liquors, are sometimes used as a restringent diet-drink in laxity of the bowels or uterus. A conserve of sloes may be made by steeping them in water over the fire till they grow soft, taking care that they do not burst; then pressing the pulp through a sieve, and adding twice its weight of refined sugar.

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* Dispensatorium Medico-Pharmaceuticum Palatinatus.

CLXIII.

RUMEX ACETOSA.

Common Sorrel.

Class VI. HEXANDRIA.—*Order* III. TRIGYNIA.

Nat. Ord. POLYGONEÆ.

GEN. CHAR. *Calyx* of three sepals, combined at the base. *Corolla* of three petals. *Nut* triquetrous, covered by the enlarged, often tubercular petals.

SPEC. CHAR. Leaves oblong-sagittate. Enlarged petals orbicular-cordate, obsoletely tubercular.

SYNONYMES.

Latin.	Acetosa pratensis, (et montana maxima). *Bauh. Pin.* 114. Oxalis, sive Acetosa. *Ger. Em.* 396. Lapathum acetosum vulgare. *Raii Syn.* 143. Acetosa vulgaris. *Park. Theatr.* 742. Oxalis. *Fuch. Hist.* 454. c. 176. Lapathum acetosum. *Scop. Carn.* 2. ii. 438. Rumex acetosa. *Lin. Sp. Pl.* 481. *Eng. Fl.* ii. p. 196. *Eng. Bot.* t. 127.
French....	Oseille; Surelle.
Italian....	Acetosa.
Spanish. ..	Acedera.
Portuguese.	Azedeira.
German. ..	Sauerampfer.
Dutch.	Veld Zuuring; Zurkel.
Danish....	Suramper.
Swedish. ..	Ængsyra; Spansk Sura.
Polish.	Szszaw.
Russ.	Konnewoi schawel.

DESCRIPTION.—The root is perennial, long, slender, branched, sending off numerous slender fibres. The stems are erect, striated, leafy, smooth, generally of a purplish-red hue, branched towards the top, and from one to two feet in height. The leaves are alternate, oblong-sagittate, smooth on both sides, undulated at the margin, and of a bright green colour; the lowermost are petiolate, obtuse, with two lobes at the base turned backwards; the upper are smaller, sessile, acute; the uppermost linear; the whole subtended by membranous, whitish, semitubular, scarious stipulæ or ochreæ. The flowers are diœcious, produced in a long terminal naked raceme, composed of spurious whorls, each flower on a short drooping peduncle, with small concave amplexicaul bracteæ at the base. The male flowers have a calyx of three greenish, ovate, concave, spreading segments; a corolla of three ovate, obtuse, greenish petals; six stamens with very short filaments and large erect double anthers. The female flowers have a calyx resembling the male, which is ultimately reflexed; three persistent petals, which enlarge from an ovate to an orbicular-cordate figure; and a smooth somewhat triangular germen, supporting three capillary spreading styles, terminated by fringed purplish stigmas. The fruit is a pendulous, oblong-triangular, smooth, shining, reddish nut, enveloped by the enlarged, reticulate, purplish-red petals, sometimes called valves, which at this period have a minute appendage or tubercle at the base on the outer side, and a wavy margin closing on the nut. Plate 41, fig. 2, (*a*) fructification of the female plant †; (*b*) male flower, isolated; (*c*) stamen; (*d*) female flower, isolated; (*e*) fruit.

This plant is frequent in most parts of Europe, and in this country abounds in meadows and pastures, flowering in June and July.

The generic name is of doubtful origin; some derive it from *ruma* or *struma*, which the *Lapathum* of the ancients was used to cure, others from *rumex*, a kind of spear, in allusion to the shape of the leaves; the latter derivation is the more probable, if it be correct that the *Oxalis* (from οξυς, *sharp*,) of Dioscorides and Pliny refers to this plant, and indicates rather the spear-like shape of the leaves than their acid taste. Acetosa is evidently derived from οξυς, *acid*.

There are numerous species of Rumex, several of which are indigenous to Britain. The Great Water Dock, (*R. Hydrola-*

† The figure in the plate represents the male plant.

pathum;) Curled Dock (*R. crispus;*) and broad-leaved Dock (*R. obtusifolius*) are particularly abundant. The Sheep's-sorrel (*R. acetosella*) bears some resemblance to the common Sorrel, but is easily recognised by its hastate lower leaves with entire lobes, ovate enlarged petals destitute of tubercles, and its smaller size, varying from three to ten inches in height.

General Uses.—Sorrel is much employed, especially on the continent, for culinary purposes, but the French Sorrel (*R. scutatus*) is more commonly cultivated and is more highly esteemed. The leaves are used in salads, and as an ingredient in broths and soups, and they form an excellent sauce for stewed lamb or veal. In some parts of Ireland they are eaten with fish and other alkalescent food. Linnæus mentions that Sorrel and Angelica are the only plants used by the Laplanders as food, except berries. "They prepare with Sorrel a kind of *acetated whey*, which they call *juemomelke*, in the following manner: They fill a copper vessel with the leaves and pour over them a third part of water, which they boil to the consistence of a syrup; then adding a fresh quantity of leaves, they boil again, constantly stirring with a piece of wood, lest the substance should acquire a burnt taste; when the boiling, which generally occupies six or seven hours, is finished, they set aside the mass that it may cool; it is then mixed with rein-deer milk, and preserved in wooden vessels, or in those made with the stomach (*ventriculo primo*) of the rein-deer. This whey retains its grateful acid flavour for a long time, and is much relished both by young and old." * Linnæus observes, that he knows of no other people who use this article of diet, and that the Laplanders themselves do not take it as a remedy for scurvy, since they are as little troubled with that disease as they are with the sun's heat in the midst of winter. The seeds of sorrel have been sometimes mixed with corn and made into bread. Dr. Clarke † states that the inhabitants of Wermeland, on the confines of Sweden, make a kind of bread with the seeds alone in times of scarcity. The roots may be employed in tanning: when dried and boiled in water they afford, with the addition of alum, a fine red colour useful to painters. The foliage of this plant, as of most others of the genus, is eaten by domestic cattle.

Qualities.—The root has a reddish-brown or yellowish colour, a bitterish sub-astringent taste, and is destitute of odour. The red colour of the aqueous infusion of the roots is changed by alkalies to a purplish, and by sulphate of iron to a deep green colour. The fresh leaves are very acid, with a slight roughness and astringency; the expressed juice obtained from them is green, thick, and turbid, but when the fæces have subsided it is clear and of a reddish colour, and more gratefully acid than the leaves in substance, when inspissated affording an essential salt, which is said to be composed of binoxalate of potass and tartaric acid. The seeds are moderately astringent, without bitterness or acidity; they communicate a reddish colour to water by infusion, which takes a brownish hue with sulphate of iron.

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* Flora Lapponica ed. J. E. Smith, p. 100.

† Travels, &c., part iii. p. 90, 4to, *Lond.* 1823.

Medicinal Properties and Uses.—The foliage of Sorrel has been celebrated for its refrigerating and diuretic properties from the earliest ages; it serves to lessen the general circulation, tends to promote cutaneous transpiration, and acts beneficially upon the other secretions. It is admissible in the treatment of most fevers, continued or intermittent, and above all, in those which are of a typhoid type; as also in malignant diseases. Wherever a high degree of tendency to putrescence exists in the body, this remedy will be found to possess considerable antiseptic power. In engorgements of the liver, bilious fevers, and vomiting, putrid eructations, heart-burn, and in renal or urinary obstructions, it forms a valuable auxiliary to other measures. In some eruptions of the skin it has also been considered useful, either eaten plentifully in salads, or taken medicinally. Like many other remedies which act by augmenting the quantity of urine, this herb has been essayed in ascites[*] and in calculi[†], but its reputation in either case has never been established. It is in the cure of scurvy that the Sorrel bears the palm, whether used alone or in combination with other antiscorbutics, as is amply testified in the writings of Bartholinus[‡], Boerhaave, Hunczousky, Faxe, and others. "When united with scurvy-grass it has been considered a specific, especially in that form of the disease where the sanguineous temperament exists, and a tendency is discoverable to headaches, febrile affections, flushings of heat, &c.; indeed, the combination of vegetable acids with scurvy-grass, and particularly of this one, will be found the most efficacious medicine in the advanced stages of that formidable disease, where the fluids of the body show manifest signs of putrescence, by the appearance of spots or blotches on the skin, spongy and ulcerated gums, fungous ulcers in different parts of the body, &c. This method was approved and practised by Sydenham, and the most eminent of the old school, and is confirmed by modern practice."*

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[*] Farrol in Hist. de la Soc. R. de Med. 1776, p. 278.

[†] Lobb de Dissolv. calc. p. 93.

[‡] Bartholinus, Act. Havn. 1671, p. 35. Boerhaave, Hist. Plant. hort. Ludg. bat. P. ii. p. 540. Hunczousky, Med. Chir. Beobacht, p. 192. Faxe, om hushallningen til Sjos. p. 168.

Externally the bruised leaves are sometimes applied to putrid ulcers, and a vinous decoction made from them is adapted to remedy a scorbutic or flabby state of the gums.

The best form of exhibiting this remedy is the expressed juice, either diluted with water or whey. The juice may be preserved by allowing it to stand for a time, then pouring off the clear liquor into bottles, to which a small quantity of alcohol may be added, if it is designed to be kept long. A decoction of the leaves, in whey, forms a useful drink in inflammatory fevers. A conserve may also be made with the leaves, and the juice may at any time be made into a syrup with a proper addition of sugar.

The root of Sorrel is reputed to remove obstructions, and promote the secretion of urine: the seeds are enumerated among the cardiac medicines, and reputed useful in alvine fluxes and dysentery; but are not used in the present day.

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* Waller, Brit. Dom. Herb. p. 323.

CLXIV.

ARTEMISIA ABROTANUM.

Southernwood.

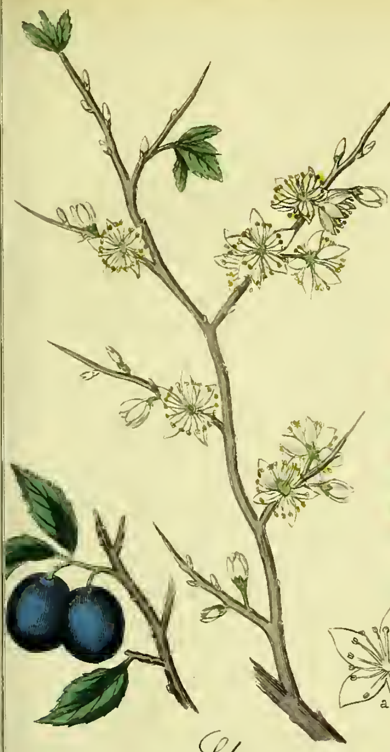
Class, &c. See Mugwort *(Artemisia vulgaris.)*

Spec. Char. Stem erect. Lower leaves bipinnate; upper pinnated, capillary. Involucre downy, hemispherical.

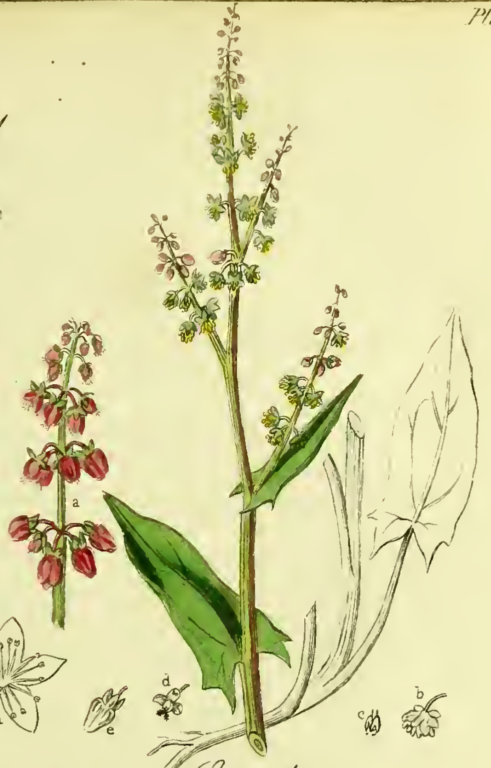
SYNONYMES.

Greek....	*αβροτονον.*
Latin....	Abrotanum mas angustifolium majus. *Bauh. Pin.* 136. Abrotanum mas. *Ger. Em.* 1105. *Park. Theatr.* 92. *Cam. Epit.* 459. *Dod. Pempt.* 21. Abrotonum. *Trag.* 341. Artemisia Abrotanum. *Lin. Sp. Pl.* 1185. *Woodv. Med. Bot.* ii. 326. t. 119. *Scop. Carn.* n. 1034.
French..	Aurone des Jardins; Citronelle; Garde-robe.
Ital. Span. and Port.	Abrotano.
German..	Stabwurz; Aberraute; Gartwurz; Gertwurz.
Dutch....	Averoon.
Danish ..	Abrod.
Swedish...	Æbrodd.
Bohemian .	Brotan.

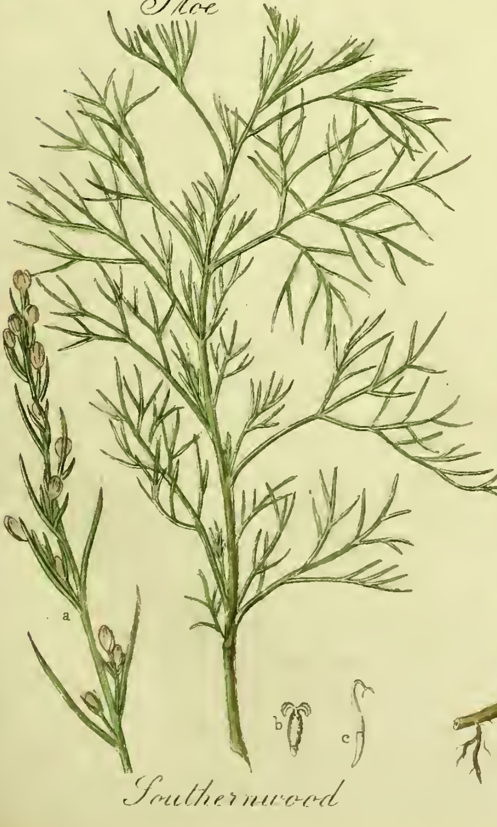
Description.—The root is perennial, woody, and fibrous. The stem is shrubby below, covered with a smooth brown bark, herbaceous and slightly woolly above, branched, leafy, and attains the height of two or three feet. The leaves are numerous, petiolate, of a light glaucous green colour, somewhat hoary or woolly, doubly pinnated, with elongated linear and capillary, obtuse, very entire segments, furrowed above, slightly concave beneath, those of the branches less divided and on longer petioles: the axils of all the leaves contain the rudiments of branches. The flowers are small, roundish, greenish yellow, arranged in terminal, slender, erect racemes. The involucre is composed of several roundish, membranous, downy, imbricated scales. The florets of the circumference are female, those of the centre



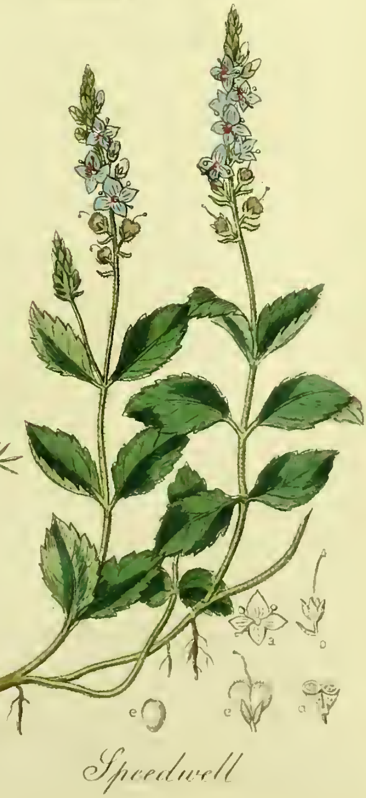
Sloe



Sorrel



Southernwood



Speedwell

or disk hermaphrodite; the corolla is very small and tubular; the filaments capillary and short, with united anthers, through which in the hermaphrodite flowers, passes the style tipped with a bifid reflexed stigma. The fruit (called *seed*) is a small dry pericarp, naked and solitary, destitute of pappus. Plate 41, fig. 3, (*a*) flowering top; (*b*) floret magnified.

Southernwood is a native of Italy, France, and Spain, also of Syria and Natolia, growing in open mountainous situations. It is frequently cultivated in gardens, and endures our severest winters. It flowers in July, but it seldom produces flowers or seeds in this country.

The origin of the generic name has been already explained. The specific name is derived from αβροτονον, a plant mentioned by Dioscorides, Theophrastus, and Galen, supposed to refer to our Southernwood, but of which they have given no description. Southernwood is the *Abrotanum mas* of the old writers, while their *Abrotanum fœmina* is the modern *Santolina Chamæ-Cyparissus*, or *Lavender Cotton*. To accord with the Greek term, it should be *Abrotonum*, not Abrotanum*.

Southernwood is said to be obnoxious to various insects, and is put into wardrobes to drive away moths; hence one of the French names, *Garde-robe*. The odour of the plant was formerly reputed to drive away serpents, and its virtues in this respect are commemorated by Lucan†. The branches are said to dye wool of a yellow colour.

QUALITIES.—The leaves and tops have a strong, fragrant, to most persons, agreeable odour‡, and a nauseous, penetrating, bitterish warm taste. An infusion or tea made with it is bitter and aromatic, but the decoctions are very nauseous. The infusion has a brownish yellow colour, and is rendered opaque and greenish black by sulphate of iron. The fresh leaves and tops distilled with water yield a small portion (about $\frac{1}{500}$th) of yellow volatile oil, to which the odour of the plant is attributable. Tinctures of the leaves made with rectified spirit are of a deep green colour, and appear to contain more of the aromatic principle than the aqueous infusion of the plant.

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* Horace mentions the Abrotonum in his *Epist.* lib. ii. v. 114.

† See Rowe's Lucan, Book ix.

‡ Bergius adds "somewhat intoxicating" (*subtemulentans*).

Medicinal Properties and Uses.—The Southernwood is possessed of medicinal properties of considerable power, and was formerly in great repute as a stomachic, deobstruent, anthelmintic, and diuretic. It is supposed to stimulate the whole system, the uterus in particular; and the complaints in which it promises to be beneficial are uterine obstructions, flatulent colic, obstructions of urine, jaundice, and worms. In the infused or theiform state it by no means constitutes an useless medicine, and in this form the strength may be varied according to the effect it is desired to produce. It is a common domestic remedy for hysterics and worms, and is considered to promote appetite. Geoffroy affirms that it is useful as a vermifuge, both on account of its bitterness, which is obnoxious to worms, and for its power of expelling the tenacious slime in which those troublesome parasites are frequently lodged.

Externally, Southernwood is discutient and anodyne, and has obtained some reputation in hepatic complaints and uterine obstructions, used in the form of baths and fomentations; likewise in the latter form to tumours and inflammatory swellings. It was at one time extolled as a remedy for baldness, and to promote the growth of hair, but its virtues in this respect are at least doubtful.

The conserve made by beating up the leaves with twice their weight of refined sugar may be given in the dose of two drachms. The dose of the powdered leaves and tops is from a scruple to a drachm. Simon Pauli recommends the powder in the dose of a drachm with as much nitre, as a remedy for suppression of urine occasioned by calculus, but the nitre is probably the efficient article. The infusion made in the manner of tea is given to the extent of two ounces or more.

WINE OF SOUTHERNWOOD.

Take of Southernwood tops, dried	two ounces.
Cinnamon	one ounce.
Cloves	two drachms.
Sherry wine	one pint.

Digest for fourteen days, and filter.—A bitter stomachic, increasing the appetite and promoting digestion. Dose, from one drachm to half an ounce.

CLXV.

VERONICA OFFICINALIS.

Common Speedwell.

Class II. DIANDRIA.—*Order* I. MONOGYNIA.

Nat. Ord. SCROPHULARINEÆ.

GEN. CHAR. *Calyx* four or five-cleft. *Corolla* rotate, the limb four-parted, unequal. *Capsule* two-celled.

SPEC. CHAR. Stem procumbent, very downy. Leaves broadly ovate, serrated, rough with pubescence. Racemes spicate. Capsule obovate, deeply notched.

SYNONYMES.

Latin	Veronica mas supina et vulgatissima. *Bauh. Pin.* 252. *Raii Syn.* 281. Veronica vera et major. *Ger. Em.* 626. Veronica assurgens. *Dod. Pempt.* 40. Veronica mas. *Fuch. Hist.* 171. c. 59. Veronica Officinalis. *Lin. Sp. Pl.* 14. *Eng. Fl.* i. p. 22. *Eng. Bot.* t. 765.
French. ..	Veronique; Veronique officinale; Veronique mâle. Thé d'Europe.
Ital. Span. and Port.	Veronica.
German ..	Ehrenpreis; Wundkraut.
Dutch....	Gemeene Eerenprys; Eerenprys Manneken.
Danish. ..	Aarenpriis.
Swedish...	Erenpreis; Jordkrypa.
Polish....	Przetacznik.
Bohemian and Russ.	Weronyka.

DESCRIPTION.—The root is perennial, filiform, jointed and creeping, with descending fibres. The stems are slender, cylindrical, firm, very downy, procumbent, rooting, ascending, usually branched from the base, and from five to ten inches in length. The leaves are opposite, on very short petioles, broadly ovate, narrowed at the base, sometimes nearly round, serrated, or toothed at the margin, rough with pubescence. The flowers are small, disposed in erect axillary and terminal racemes; each flower supported on a short peduncle with a linear bractea at the base. The calyx has four ovate-lanceolate, obtuse, hairy segments. The corolla is rotate, pale purple, marked with deeper lines, of four deep, ovate, obtuse unequal segments, the lowermost smaller than the rest. The two stamens are erect, inserted into the tube, and a little longer than the corolla, with subulate filaments and cordate obtuse anthers. The germen is ovate, obtuse, compressed, pubescent, furrowed, glandular at the base, supporting a subulate, erect, purplish style as long as the stamens, terminated by a truncate stigma. The fruit is an obovate, compressed capsule, deeply notched at the summit, somewhat pubescent and ciliated, two-celled, two-valved, containing several small, brownish seeds. Plate 41, fig. 4, (*a*) entire flower; (*b*) calyx and pistil; (*c*) capsule; (*d*) transverse section of the same; (*e*) seed magnified.

This plant grows in woods, on dry barren pastures, commons and hedge-banks, flowering in June and July. It often forms small patches in dry open places in woods, and the simple subdued brilliancy of its flowers, has a pleasing effect.

Common Speedwell appears to have been unknown to the earliest writers on plants, at least it is not described by them. Its English synonymes are Male Speedwell, and Fluellin; it has also been called *Paul's Betony*, because Dodoneus and others supposed it to be the *Betonica* of Paulus Ægineta.

General Uses.—Common Speedwell has been recommended as a substitute for foreign tea, to which it is certainly inferior in flavour, but it may be usefully combined with other plants of an aromatic kind, such as Lavender, Balm, Marjoram, or Woodruff. The eulogies of Hoffmann have caused it to be employed to some extent for this purpose, in Germany; and according to Linnæus it is used by the Swedish peasantry. The leaves of Germander Speedwell (*Veronica Chamædrys*) are, however, equal if not superior. In decoction with iron filings, the leaves yield a black dye, which may be used for staining leather, &c.

The plant is eaten by horses, cows, goats and sheep, but refused by swine.

Qualities.—The fresh leaves have a very feeble but rather grateful odour, which is lost in drying, but passes over in distillation with water, without affording any volatile oil; to the taste, they are almost insipid at first, but soon become rough and slightly bitter. These qualities are most probably to be ascribed to extractive and tannin. The saturated watery infusion of the flowering tops is dull red, with rather a pleasant odour and bitterish taste; it is quickly rendered black by sulphate of iron. The aqueous and spirituous extracts are bitter and sub-astringent, the latter more completely so.

Medicinal Properties and Uses.—This plant agrees with many bitter substances; it elevates in some degree the tone of the organs, but its tonic action is both slow and feeble, and its secondary operation is also obscure, so that it has been indiscriminately recommended in maladies which call for tonics, and in those which need demulcents. By Hoffmann*, who contributed greatly to establish its reputation, it was considered to be a cure for various diseases, particularly those affections of the chest arising from a collection of mucus, such as cough, asthma†, and even in ulcerated lungs‡. Haller§ likewise attributes to it great power in catarrhal suffocations. But considering the character of these affections, and the reputed tonic property of the remedy, we join with the judicious Murray|| in questioning the propriety of the measure, as tending rather to prevent than assist expectoration, unless debility of the lungs be present, in which case the corroborant may be beneficial. Like other slight astringents, it has not been without its advocates as a lithontriptic. It is possible that it may sometimes excite the kidneys and provoke more urine when these organs are in a

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* Diss. de infusi Veronicæ efficacia præferenda herbæ Theæ, *recus.* in Opusc. Med. p. 390.

† "Sir John Hill commends the expressed juice of the plant, boiled into a syrup with honey, as an excellent remedy in asthma and other affections of the lungs."—*Waller's Brit. Dom. Herb.* 328.

‡ Francus (Veronica theizans, *Coburg*, 1700,) calls it "*Polychresta herba Veronica*," and enumerates forty cases of its efficacy, especially recommending it in wounds, phthisis, and scabies.

§ Hist. St. Helv. n. 542.

|| Appar. Medic. tom. ii. p. 244.

state of atony, but it can never effect the solution of calculi of the bladder: moreover, it can never be useful when the passages are the seat of inflammation. At one time it was much in esteem in this country as a remedy for the gout, and was eagerly bought up at an exorbitant price, which led to its adulteration and hastened the downfall of its reputation. Its efficacy in pruritus, scabies, and other diseases of the skin, is very questionable, as also its vulnerary power, although it has long ranked among the first of that class, and is said to have been beneficial in dysenteries, and wherever ulceration of the intestines has been suspected to exist. Its external application to foul ulcers requiring excitation, may probably sometimes prove of service.

The most convenient form of administering Speedwell is the expressed juice, or the following infusion: if the former be preferred the ordinary dose is an ounce.

INFUSION OF SPEEDWELL.

Take of Speedwell..................one ounce.
Boiling water...............one pint.

Infuse for one hour, and strain.—Dose, from two to six ounces.

A vinous infusion may also be made, or a tincture, or a spirituous extract, as alcohol appears to take up its active matter better than water. A syrup may likewise be prepared with the expressed juice.

CLXVI.

DAPHNE LAUREOLA.

Spurge-Laurel.

Class, &c. See Mezereon *(Daphne Mezereum).*

Spec. Char. Racemes axillary, about five-flowered. Leaves lanceolate, smooth, evergreen.

SYNONYMES.

Latin	Laureola sempervirens, flore viridi. *Bauh. Pin.* 462. Laureola. *Ger. Em.* 1404. *Raii Syn.* 465. *Park. Theatr.* 205. *Dod. Pempt.* 361. Daphnoides cum fructu. *Lob. ic.* i. 368. Thymelæa Laureola. *Scop. Carn.* n. 463. Daphne major. *Lamarck. Fl. Fr.* iii. p. 221. Daphne Laureola. *Lin. Sp. Pl.* 510. *Engl. Fl.* ii. p. 229. *Engl. Bot.* t. 119.
French	Laureole.
Italian	Laureola; Laureola maschio.
Spanish	Laureola macho.
Port.	Loireola macho.
German	Seidelbast.
Dutch	Zwart Peper-boompje.

Description.—The root is perennial, thick, ligneous, and pliant. The stem is shrubby, erect, rather stout, tough, covered with a brownish ash-coloured bark, but little branched, naked below, leafy above, growing to the height of two to four feet. The leaves are evergreen, broadly lanceolate, thick, glabrous, of a dark shining green colour, closely arranged towards the summit of the stem. The flowers are yellowish-green, drooping, disposed in axillary racemes, about five together, on long petioles, each accompanied by an ovate concave bractea.

The perianth is single, funnel-shaped, pale yellowish green, deciduous, with a four-cleft limb separable into two laminæ. The stamens are included, arranged in two rows of four each, with very short filaments and two-celled yellowish anthers. The germen is ovate, supporting a very short style, and an undivided capitate stigma. The fruit is an ovate, bluish-black drupe, with a succulent covering, resembling a berry, containing a hard nut, with a solitary pendulous seed. Plate 42, fig. 3, (*a*) perianth opened to show the stamens; (*b*) pistil; (*c*) nut.

This plant is a native of the south of Europe, Austria, and Switzerland, and is not uncommon in woods, thickets, and hedges in England, particularly in Yorkshire. It is found in Scotland, chiefly about Rosslyn and Bothwell. It flowers in February and March.

The name Laureola has been given to this shrub, because its foliage has some resemblance to that of the Laurus or Laurel. Some have thought the Spurge-Laurel to be the χαμαιδαφνη of Dioscorides and the κνεωρον of Theophrastus. Gerard says, "it is called of diuers *Lawrell* and *Lowry*."

Spurge-Laurel is valued in shrubberies as an evergreen, for the early appearance of its flowers, and because it thrives under the shade and drip of other trees.

Qualities.—The Spurge-Laurel flowers, leaves, bark, and fruit, especially the two latter, are nauseous and very acrid, scarcely perceptible to the taste at first, but soon affecting the tongue, palate, and fauces with a sensation of burning heat, which lasts for a considerable time. The berry or rather the nut of the drupe contains, as in the Mezereon, an oily matter, on which its acrid and caustic properties appear to depend. Van Swieten, who tasted a little of this oil squeezed from the berries between his fingers, found it mild to the taste at first, but in a short time it produced inflammation of the fauces, and he was nearly suffocated*. The bark probably contains the same principle as that of Mezereon.

Poisonous Properties.—It is apparent from the foregoing statement, that this plant is an acrid poison. The berries, however, are the favourite food of some birds, particularly pheasants, but it is uncertain whether they do not reject the nut and eat only the pulpy covering. We have met with no instance on record of its poisonous effects on man except the following, related by Mr. Waller:—

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* Comment. vol. i. p. 638.

"A strong robust peasant, who was attacked by venereal disease, which began to gain ground and threatened a bubo on each groin, mentioned his distress to a soldier of his acquaintance, who strongly recommended him to make use of this plant, which he gathered and prepared for him, stripping off a single leaf downwards, so as to include a small portion of the bark, and after drying this in an oven, and reducing it to powder, gave him the whole of it in the morning in a pint of beer. In the course of ten minutes sickness came on, followed by copious vomiting, by which means, probably, the greater part of the medicine was evacuated. The patient, however, experienced a dreadful sensation of heat, which diffused itself immediately from the stomach to every part of the frame, so that, to use his own phrase, 'the blood appeared to boil in all his veins.' In about an hour, a severe purging commenced, which continued without intermission for several hours, the matter evacuated burning and excoriating the passages to a degree that was intolerable. This extreme agitation of the whole system, which was accompanied with violent fever and tendency to delirium, continued nearly twenty-four hours, and for the last five or six, he was in a profuse sweat, which terminated in some hours of refreshing sleep. On awaking, the patient found himself, as it were, recovered from a severe and dangerous indisposition; the syphilitic symptoms had entirely disappeared, and a ravenous appetite quickly succeeded; the whole frame feeling as if totally renovated."

If any case should occur of accidental or intentional poisoning by this plant, the treatment will not differ from that recommended under the article "Mezereon."

MEDICINAL PROPERTIES AND USES.—The leaves, bark, and fruit of this plant are violent in their operation on the organic system of man, being more or less acrid, corrosive, excoriating, drastic, diaphoretic, and externally, rubefacient. The chief disease in which it has been employed is syphilis, but in these cases, it has been known to be followed by violent and alarming symptoms, as already described. Similar effects were produced in a case of inveterate hypochrondriasis, in which it was successfully administered*. Geoffroy† mentions that the bark, leaves, and seed of this plant have been recommended by some as efficacious in evacuating dropsical secretions; for this purpose from six to ten grains of the bark or leaves have been given, or three or four of the seeds to be swallowed whole. The bark has also been substituted for Mezereon, with the action of which it appears to have a strong affinity, whether administered internally or applied externally. It has been particularly spoken of as an effectual remedy in rheumatism. We have, moreover, been personally informed, that the leaves are not infrequently used by the peasantry, in some parts of England, for the purpose of inducing abortion.

While some authors advise its exhibition in the form of powder, others equally value it when its virulence has been moderated by infusion in water, wine, vinegar, or some ascescent liquid. As an internal medicine, however, we should say that it ought not to be ventured on until its properties are more fully explored. In the hands of a skilful and judicious practitioner it might prove a valuable article of the materia medica.

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* Waller's Brit. Dom. Herb. p. 331.

† Mat. Med. tom. iii. p. 694.

CLXVII.

HYPERICUM PERFORATUM.

Common St. John's-Wort.

Class XVIII. POLYADELPHIA.—*Order* I. POLYANDRIA.

Nat. Ord. HYPERICINEÆ.

GEN. CHAR. *Calyx* five-parted, inferior. *Petals* five. *Filaments* united at the base into three or five sets.

SPEC. CHAR. Styles three. Stem two-edged. Leaves oblong, obtuse, with pellucid dots. Calyx leaves lanceolate.

SYNONYMES.

Greek	*υπερικον.*
Latin.	Hypericum vulgare. *Bauh. Pin.* 279. *Tourn. Paris.* 106. *Park. Theatr.* 572. Hypericum. *Ger. Em.* 539. *Lob. Obs.* 216. *Raii Syn.* 342. *Fuchs.* 789. c. 322. Hypericon. *Dod. Pempt.* 76. Hypericum perforatum. *Lin. Sp. Pl.* 1105. *Eng. Fl.* iii. p. 325. *Eng. Bot.* t. 295.
French. ..	Millepertuis ; Millepertuis perforé ; Herbe de Saint-Jean.
Italian . ..	Iperico ; Pilatro ; Perforata.
Spanish ..	Hiperico ; Hipericon ; Yerba de San Juan ; Corazoncilla.
Port.	Milfurada.
German ..	Johanniskraut.
Dutch	St. Jans kruid ; Mansbloed.
Danish....	St. Hans urt ; Jordhumle ; Perikum.
Swedish . ..	Johannisoert.
Polish	Dziurawiec.
Russ......	Sweroboi.
Bohem.....	St. Jana bylina.

DESCRIPTION.—The root is perennial, ligneous, creeping, tufted, much branched, and of a yellowish brown colour.

The stems are erect, from one to two feet or more in height, firm, glabrous, cylindrical, but ridged between each joint by two opposite angles, continuations of the midrib of each leaf, which render the stem two-edged. The leaves are small, sessile, opposite, each pair crossing those immediately below, oblong or obovate-lanceolate, rather obtuse, entire, glabrous, light green, sprinkled with numerous pellucid dots; a small simple leafy branch proceeds from the axil of each lower leaf. The flowers are disposed in terminal leafy panicles, on dichotomous branches, with oblong, opposite bracteæ at the base of each pedicel. The calyx consists of five, lanceolate, acute, entire sepals, margined with black glandular dots. The five petals are ovate, acute, bright yellow, entire at one margin, crenate at the other, glandular like the calyx. The stamens are numerous, usually in three parcels, terminated by yellow, roundish didymous anthers, each tipped with a dark purple dot or gland. The germen is superior, ovate, glabrous, supporting three diverging styles, terminated by simple, convex, crimson coloured, (occasionally whitish,) stigmas. The capsule is three-sided, three-celled, tipped with the permanent styles, and contains several small, oblong, shining, blackish-brown seeds. Plate 42, fig. 1, (*a*) calyx; (*b*) petal; (*c*) stamen, natural size; (*d*) the same magnified; (*e*) pistil; (*f*) capsule, subtended by the calyx; (*g*) transverse section of the same.

This plant is very frequent in woods, thickets, and under hedges; flowering in July and August.

The generic name is derived from υπερικον, a term employed by the ancient Greek writers to denote the St. John's-Wort, or some similar plant. Dioscorides* gives a short description of the υπερικον, but it is as usual vague and indefinite. The term is probably derived from υπερ, *over*, εικων an *apparition*, in allusion to the reputed influence of the plant over mental delusions; hence also the old name *fuga dæmonum*. The common name *St. John's-Wort* originated in the appearance of the blossoms about St. John's day.

The genus contains several individuals more or less noted for their elegance and beauty, and on this account frequently cultivated. The British species amount to eleven, some of which nearly resemble the *H. perforatum*, but the foregoing description will sufficiently distinguish it. The Tutsan *(H. Androsœmum)*, so called from the French *Toute-saine*, in allusion to its vulnerary properties, occurs in thickets, and under hedges, though seldom truly wild in England.

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* Mat. Med. lib. iii. c. 171.

The derivation of the name proves the superstitious notions that were formerly current respecting this plant. It was called *fuga dœmonum*, probably not because it was ever supposed capable of expelling demons, but on account of its beneficial effects in hypochondriasis and insanity. It has, however, obtained the popular character of a charm against witchcraft and evil spirits. According to Pennant, it is customary in Wales to stick sprigs of St. John's-Wort on every door on the eve of St. John's day; and Stow* informs us, "that on the vigil of St. John the Baptist, every man's door being shadowed with green birch, long fennel, St. John's-Wort or pine, white lilies, and such like, garnished upon with garlands of beautiful flowers, had also lamps of glass, with oil burning in them all night." Formerly it was carried about by the people of Scotland as a preservative from enchantments and spells; and they fancy that the malignant influence which has produced ropy milk in their pails is dispelled by milking afresh upon this herb. The common people in France and Germany gather it with great ceremony on St. John's day, and keep it in their houses as a preservative against storms, thunder, and evil spirits; and the girls of Lower Saxony hang sprigs of this plant at the head of their bed on the eve of St. John's day†. Harte refers to this custom, when, after enumerating certain flowers, he speaks of

> " ——— that which on the Baptist's vigil sends
> To nymphs and swains the vision of their friends."

Moreover, from the red coloured juice of its capsules, considered a signature of human blood, and perhaps from the punctured appearance of the leaves, St. John's-Wort has been in great repute as a remedy for wounds. In allusion to the leaves, it has been fancifully termed "the herb of war:"—

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* See Brand's Antiquities, vol. i. p. 246.

† See Drummond's First Steps to Botany, for some pretty lines referring to this practice, translated from the German.

> "Hypericon was there, the herb of war,
> Pierced through with wounds, and seamed with many a scar."

The elegant author of Gondibert styles it—

> "Balm of the warrior's wound, Hypericon."

The only economical use to which this plant has been applied is that of a dye. The dried herb boiled in alum-water communicates a yellow, or yellowish red colour, to wool, silk, &c. It is eaten by kine, goats, and sheep, but refused by horses and swine.

Qualities.—The plant has a slight aromatic odour, and when the leaves or flowers are rubbed between the fingers, rather a powerful lemon-like scent is evolved. To the taste it is bitterish, resinous, and somewhat astringent. The leaves when held up to the light present a number of transparent dots or vesicles *, containing an essential oil, on which the odour of the plant depends. This oil may be obtained in distillation with water; it bears some resemblance to oil of turpentine. The dark glands on the calyx and petals also appear to contain a similar oil, as do the small tubercles on the fruit, but in the latter it seems to partake more of the nature of a gum-resin, and has been compared to gum-lac. Rectified spirit takes up the virtues of the plant better than water, and the tincture acquires a deep yellowish red colour. It yields a paler red to the expressed oils, but its colouring matter is scarcely soluble in the volatile oils or in water.

Medicinal Properties and Uses. — Ancient writers on the materia medica attribute to the St. John's-Wort a host of virtues; hence it has been used as a detersive, resolutive, vulnerary, anthelmintic, diuretic, emmenagogue, &c. For pulmonary consumption, and ulcers of the lungs, it is mentioned by several celebrated physicians, but its credit in these diseases has not continued so well established as many other

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* The flowers abound most in the essential oil immediately before they expand, as at that time the vesicles are full, subsequently they begin to dry up. Therefore, when the flowering tops are preferred, they should be gathered when the plant is beginning to blossom; otherwise it is better to gather the plant for use, after the petals have fallen and the capsules are fully formed, as the latter afford more of the volatile oil than the flowers or leaves.

remedies of the same class. It has been not less extolled for dissolving congested blood, cleansing and cicatrizing ulcers of the kidneys, bladder, and other viscera*. Baglivi † went so far as to imagine that it would cure chronic pleuritis; and if Ettmuller may be credited, it is a diuretic without an equal, the decoction or extract sufficing to cure or prevent ischuria, hœmaturia, nephritis, and even the formation of urinary calculi. Similar assertions have elsewhere been made, most of which are equally visionary. Its real character appears to be that of a mild stimulant, tonic, and corroborant. From the tonic principle inherent in this herb, it may be administered in amenorrhœa to restore the catamenia, particularly in delicate females of a lymphatic temperament, and with whom there is a deficiency of uterine action; and from the analogy existing between the properties of the oil of turpentine and the oil of St. John's-Wort, we feel disposed to think the latter might also be successfully used in worm cases.

Externally it has also enjoyed no slight fame as a vulnerary, and as an excitant to limbs afflicted with chronic rheumatism, which, indeed, will often yield to topical stimulants. Its effects in resolving tumours consequent on contusions, and dispersing ecchymoses, cleansing ill-conditioned ulcers, and promoting the union of indolent wounds, likewise depend on the same property. The tops combined with chamomile, &c, enter into most emollient and anodyne fomentations.

St. John's-Wort may be given in powder from half a drachm to a drachm; in infusion, from two to three ounces; in wine, from two drachms to an ounce; or the volatile oil, from two to six drops. The strength of the infusion and of the wine should be in the proportion of one ounce of the herb to one pint of the vehicle. The oil of St. John's-Wort, obtained by digesting the flowers in olive oil for several days, was once in high repute as a vulnerary.

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* See Linnæus, Diss. de Hyperico, resp. Hellenio, p. 9.—Fallopius, Trad. de vuln. in gen. c. 15.—Forestus, Obs. Med. lib. ix, Obs. 8, 32, &c.—Scopoli, Fl. Carn. p. 311.—Camerarius, Hort. Med. p. 77.—S. Paulli, Quadripart. Bot. p. 389.—Murray, App. Med. tom. iii. p. 520.

† Oper. omn. p. 39.

CLXVIII.

DELPHINIUM STAPHISAGRIA.

Stavesacre.

Class XIII. Polyandria.—*Order* II. Pentagynia.

Nat. Ord. Ranunculaceæ.

Gen. Char. *Calyx* coloured, deciduous, irregular; upper sepal produced at the base into a spur. *Petals* four; the two upper prolonged at the base into appendages within the spur.

Spec. Char. Spur very short. Bracteolæ inserted at the base of the pedicels. Petioles hairy. Pedicels twice as long as the flower.

SYNONYMES.

Greek	*σταφις αγρια.*
Latin	Staphisagria. *Bauh. Pin.* 324. *Ger. Em.* 495. *Raii Hist.* 705. *Park. Theatr.* 223. *Dod. Pempt.* 362. *Fuchs.* 745. Delphinium platani folio, Staphisagria dictum. *Tourn. Inst.* 428. Delphinium Staphisagria. *Lin. Sp. Pl.* 750. *Fl. Græca,* 508.
French	Staphisaigre; Herbe aux poux.
Italian	Staffisagria.
Spanish ..	Albarraz; Espuela; Yerba piojera.
Port.	Alvarraz.
German ..	Läusenkraut; Stephanskörner.
Dutch	Luiskruid.
Danish	Luusurt.
Swedish ..	Staffansfrœ; Lusoert.
Polish	Gnidosz ziele.

Description.—Stavesacre is a biennial herbaceous plant, with an erect, cylindrical, downy stem, slightly branched, tinged with purple, and attaining the height of one or two feet. The leaves are large, alternate, glabrous, green, often spotted with brown, palmated with from five to seven deep, ovate-lanceolate lobes, gradually smaller towards the top of the stem, supported on long downy footstalks. The flowers are light blue or purplish, disposed in a lax, terminal, spike-like raceme; each flower supported on a pedicel about twice as long as itself. The calyx is petaloid, the upper sepal extended behind into a long tubular spur. The corolla consists of four petals, placed in front of the sepals, the two upper narrow, small, extended at the base into spurs like the sepal in which they are enclosed; the two lower and outer whitish, rounded, and plaited at the margins. The filaments are numerous, subulate, crowned with oblong yellow anthers. The germens are three, tapering, pointed, downy, with filiform styles terminated by simple stigmas. The capsules are three, ovate-oblong, tapering, pointed, one-celled, one-valved, containing several seeds, which are large, brown, angular, plano-convex at the back, keeled in front, and rough all over with excavated points. Plate 42, fig. 2. (*a*) corolla; (*b*) stamens.

This plant grows in shady places in Italy, the south of France, and in other parts of southern Europe; flowering from May to August. It was cultivated in England by Gerard in 1596.

The generic name is derived from δελφιν, *a dolphin*, on account of the fancied resemblance between the nectary of the flower and the figure of the dolphin. The description given by Dioscorides[*] of his σταφισαγρια[†], agrees in most particulars with this plant. It is the *Staphis* and *Astaphis agria* of Pliny. It has also been called φθειροκοκκον, *herba pedicularis*, or *Louse-wort*, a synonyme which is retained in most of the European languages.

QUALITIES.—The seeds are the only part of this plant employed in medicine; they are rough, of a blackish grey colour, trigonal, or tetragonal in form, and contain a yellowish substance of an oleaginous nature. They have a slight disagreeable odour, and a bitter, acrid, and hot taste;

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[*] Mat. Med. lib. iv. c. 156.

[†] From σταφις, *a dried raisin*, αγρια, *wild*, in allusion to the dry wrinkled seed. Hence also the English name *Stavesacre*.

the yellowish internal substance possessing these qualities in a greater degree than the cortical part. Their virtues are partially extracted by water, and completely by alcohol. Neumann obtained from the seeds by expression a portion of fatty oil.

Lassaigne and Feneulle * have detected in the seeds of Stavesacre a peculiar alkaline principle, on which its active properties depend, and which they have named *delphine* or *delphinia*. It is a solid white pulverulent, but crystalline powder, fusible like wax, very bitter and acrid, almost insoluble in water, but very soluble in ether and alcohol, and unites with acids, forming neutral salts. It is obtained by boiling the powdered seeds in distilled water, which must be pressed through a cloth, then filtered, and boiled for a few minutes with pure magnesia; the decoction is then refiltered, and the residuum left on the filter boiled with alcohol; which is lastly carefully evaporated, and the result is a white powder,—*delphinia*.

POISONOUS PROPERTIES.—The ancients were well acquainted with the acrimonious qualities of Stavesacre, and placed it in the rank of the most baneful poisons. The experiments of Hillefeld † and of Orfila ‡ upon dogs prove that the seeds introduced into the stomach or applied to wounds, cause death, preceded by efforts to vomit, debility, trembling, immobility, and convulsions; after death, traces of inflammation are found in the stomach, enormous inflammatory swelling of the limb to which they have been applied, and sometimes sanguineous congestion in the lungs. The active principle, *delphinia*, even in small doses, is a violent poison, acting chiefly on the nervous system.

The treatment required in cases of poisoning by Stavesacre will not differ from that already advised under the articles, *Arum*, *Bryony*, *Crowfoot*, *Hellebore*, *&c.*

MEDICINAL PROPERTIES AND USES.—The seeds only of this plant have been used in medicine, and from time immemorial they have had a place in most of the European pharmacopœias. In their action, (from the presence of *delphinia*,) they are powerfully purgative and sialagogue. When ingested they produce a sensation of acridity and constriction of the pharynx, followed by vomiting, general debility, tremblings, aphony, involuntary evacuation of the fæces, and even death. By the ancients they were used as a cathartic, for carrying off the waters of dropsy, but only in those cases where there was sufficient constitutional power to withstand the operation of drastic purgatives. By the moderns the Stavesacre is rarely used internally, and from its energetic properties, the employment of it is better confined to merely external application; nevertheless, after chemists shall have determined the exact properties of the new principle (*delphinia*), and practitioners of known ability and experience shall have determined its medical virtues, we trust to see it become a valuable remedy for chronic diseases.

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* Ann. de Chimie et de Phys. xii. p. 358.

† Diss. de venen. p. 20.

‡ Toxicol. gen. i. p. 739.

The external use of the seeds is principally as a masticatory, to induce a plentiful secretion of saliva, and as an excitant or detergent, in lotions, gargles, epithems, &c., for the tooth-ache, and to paralytic and other chronic affections. For the itch, scald-head, and other diseases of the skin, they have not lost the character handed down to us by our forefathers, neither are they less deservedly praised for the faculty of destroying human vermin, a reputation which gave rise to the specific synonyme *Pedicularia*.

The dose of the powdered seeds, when taken as a cathartic in dropsical disorders, should not exceed at first three grains, which must be repeated and gradually increased according to the effects produced.

DECOCTION OF STAVESACRE.

Take of Stavesacre seeds, bruised....	one ounce.
Spring water..............	one pound and a half.

Boil down to one pound, and then add to the strained decoction thirty drops of laudanum.

This remedy is particularly efficacious in itch. It should be applied by means of linen rag twice a day, and if it irritates too much, it must be diluted with water. The disease usually yields to this application in about ten or twelve days.

TINCTURE OF STAVESACRE.

Take of Stavesacre seeds, bruised....	one ounce.
Alcohol....................	one pint.

Macerate for fourteen days, and strain.

Dr. Blanchard, of America, has proposed this as a remedy for asthma, but of its utility in that disease we have no experience. He directs it in doses of twenty drops, at first, to be gradually increased to forty if necessary, and considers it even preferable to Foxglove.

CLXIX.

SEDUM ACRE.

Wall Stonecrop.

Class X. DECANDRIA.—*Order* IV. PENTAGYNIA.

Nat. Ord. CRASSULACEÆ.

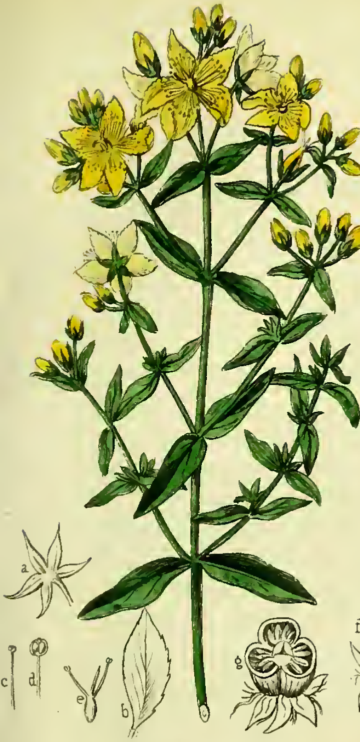
GEN. CHAR. *Calyx* of five (sometimes four to eight) sepals, often resembling the leaves. *Petals* five, spreading. *Germens* five, each with a nectareous gland.

SPEC. CHAR. Leaves erect, alternate, ovate, gibbous, fleshy, produced at the base. Cymes trifid, glabrous, leafy.

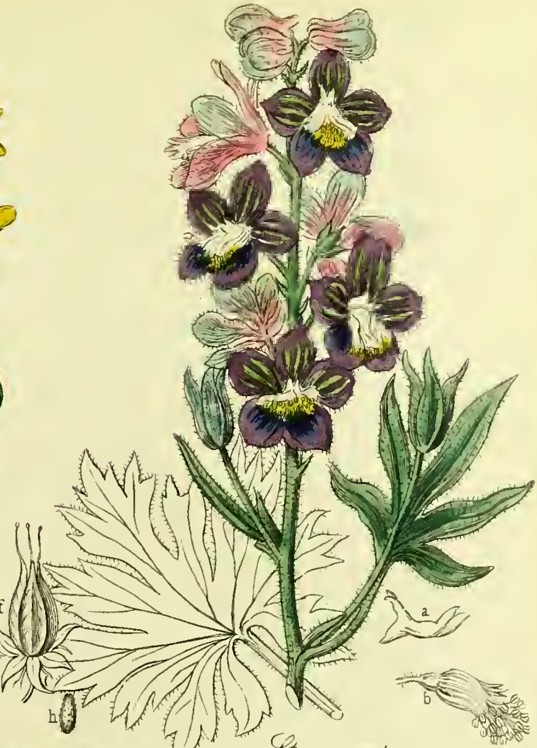
SYNONYMES.

Greek	*αειζωον μικρον.*
Latin......	Sempervivum minus, vermiculatum acre. *Bauh. Pin.* 283. Sempervivum parvum acre, flore luteo. *Raii Hist.* 1041; *Syn.* 270. Vermicularis sive Illecebra minor acris. *Ger. Em.* 517. Illecebra minor, sive S. tertium Dioscoridis. *Park. Theatr.* 735. *Dod. Pempt.* 129.
French....	Petite Joubarbe; Vermiculaire; Poivre de muraille.
Italian....	Sedo acre; Pinochiella.
Spanish...	Siempreveva menor; Uvas de gato.
Port......	Vermicularia.
German. ..	Hauswurz; Kleines Hauswurz; Mauerpfeffer; Katzentraublein.
Dutch.....	Muur Peper; Sherp Huislock.
Danish....	Helleknop.
Swedish ..	Fetknoppar; Hœllegrœs.
Russ..	Motodile.

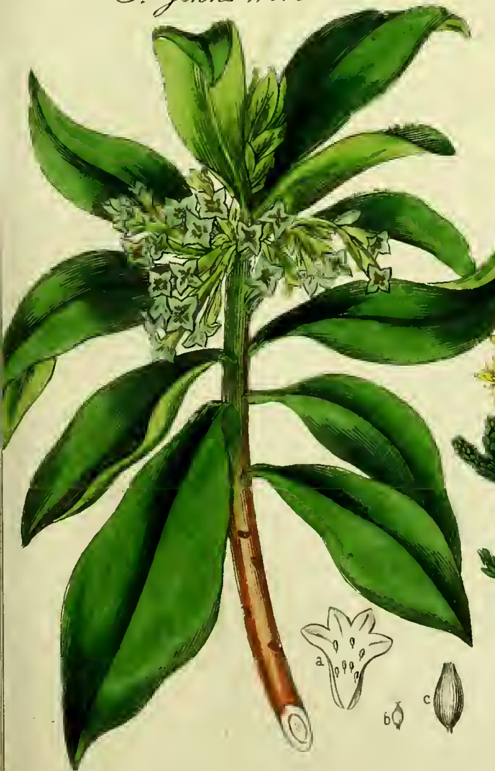
DESCRIPTION.—The root is perennial, consisting of several slender descending fibres, proceeding from a slender creeping stock. The stems are several, creeping at the base, somewhat



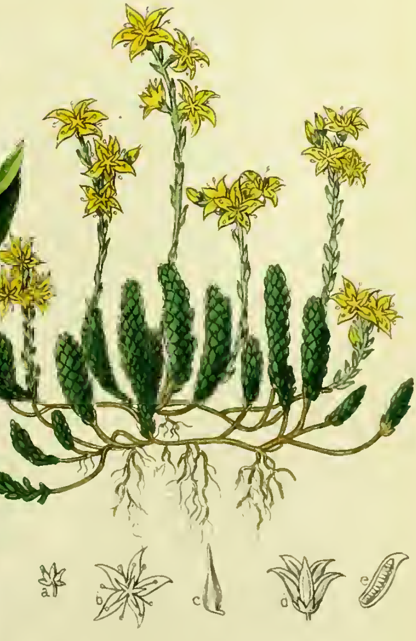
St Johns Wort



Stavesacre



Spurge-Laurel



Stonecrop

branched, ascending, smooth, pale green, succulent, and from two to four inches in length. The leaves are alternate, nearly erect, short, ovate, obtuse, adnato-sessile; rather convex and gibbous beneath, prolonged at the base, very succulent and smooth, bright green, numerous, and closely imbricated on the barren shoots. The flowers are arranged in small terminal cymes, which are usually trifid. The calyx consists of five ovate-oblong obtuse sepals. The petals are lanceolate, acuminate, spreading, keeled beneath, and of a bright yellow colour. The stamens are ten, with spreading subulate filaments, crowned with reniform two-celled anthers, bursting lengthwise. The germens are five, glabrous, conical, diverging, with a nectareous scale at the base of each, and taper into subulate styles tipped with simple stigmas. The fruit consists of five carpels or follicles, opening when ripe by a longitudinal chink in front. The seeds are attached to the margins of the suture in two rows. Plate 42, fig. 4, (*a*) calyx; (*b*) entire flower; (*c*) germen magnified; (*d*) fruit; (*e*) carpel, divided longitudinally to shew the seeds.

This plant is very common on rocks, walls, roofs of houses, and dry sandy ground, in this country and the rest of Europe; flowering in June.

The generic name is derived from *sedo*, *to sit*, alluding to the humble growth of the plants upon their native rocks. The pungent acrimony of this species has obtained for it the trivial name *acre*, and the popular synonymes *Biting Stonecrop* and *Wall Pepper*. There is no doubt that this plant is intended by one or other of the species of αειζωον, enumerated by the ancient Greek writers.

There are several other indigenous species of Sedum, for the characters of which we must refer to works on general Botany. They are all found, in common with the rest of the natural order to which they belong, in the driest situations, exposed to the fiercest rays of the noon-day sun, and where other plants seem incapable of finding nutriment. But as De Candolle observes, soil is to them a something to keep them stationary rather than a source of nutriment, which in these plants is conveyed by myriads of mouths, invisible to the naked eye, but covering all their surface, to the juicy beds of cellular tissue which lie beneath them.

Qualities.—Stonecrop is inodorous, but in its recent state it has a warm, pungent, acrimonious taste, like that of Biting Persicaria. The expressed juice contains these properties in a high degree; chemical analysis, however, has not made us acquainted with its constituent principles. Its active matter is evidently of a volatile kind, coming over in great part in distillation with water, and being scarcely perceptible in the dried herb, but is not destroyed in the fresh plant by long continued decoction; thus differing from the acrid principle of the *Ranunculus* tribe. According to Bergius [*], the aqueous infusion is yellowish, not unlike tea, inodorous, with a slightly acrid and nauseous taste, and is not affected in colour by sulphate of iron.

Poisonous Properties.—Orfila has shown that this plant deserves to be ranked among the less potent of the acrid poisons. He gave four ounces and a half of the expressed juice to two dogs and tied the œsophagus; they soon made efforts to vomit, and after some hours became much dejected; one of them was totally insensible, and exhibited slight convulsive movements of the paws previous to death. The mucous membrane of the stomach was excessively red, the lungs were reddish and more dense than natural.

Accidents to the human subject are not very likely to occur from this plant; and if too much of it were swallowed, it would probably be soon ejected by vomiting. If such should occur, however, the same remedies will be required as for Crowfoot and other acrid vegetables already described.

Medicinal Properties and Uses.—This plant, when ingested, generally produces vomiting and purgation, and its exciting action may be consecutively directed to different organs and produce different secondary effects; hence it may prove diuretic, aperitive, febrifuge, detersive, &c. With the view of exerting one or other of these properties, Stonecrop has been used in various diseases, particularly dropsy, scurvy, intermittents, epilepsy, and chorea. In dropsical accumulations it is only admissible when the patient's constitutional powers are adequate to its purgative operation. Below [†], a Swedish physician, gave it boiled in milk or beer in scurvy, and the latter decoction, associated with honey of roses and alum, he also used as a gargle for inflammation of the gums, and to cleanse ulcers which have supervened to scurvy; he also applied cataplasms of the boiled herb upon the joints to rectify that contraction of the limbs which sometimes takes place in scorbutic persons. In intermittents, one pint of a strong decoction[*], drunk an hour before the accession of the paroxysm, was found by Linnæus[†] very efficacious, especially when vomiting was produced. Lange[‡] also speaks of half a spoonful of the expressed juice mixed with wine, as being a popular remedy for intermittents among the peasantry of his country. With respect to its utility in epilepsy and chorea, several facts have been published in Germany and France to prove that it is sometimes beneficial; among others M. Peters has related five cases of epilepsy and chorea, in which, by giving from eight to ten grains *per diem*, for some time, one was cured, and the paroxysms rendered less severe in the others[§]. In dismissing the internal employment of this herb, it is necessary to observe, that it should be cautiously administered on account of its acrid and excitant qualities.

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[*] Mat. Med. tom. i. p. 376.

[†] Below, in Misc. nat. cur. Dec. i. Ann. 6. Obs. 22. p. 49.

As an external remedial agent, the Stonecrop has been renowned from the earliest days of medicine. Galen is said to have used it, as a topical application, in fistula lachrymalis, and Dioscorides for indurated scrofulous swellings. Marquet[||] asserts, that he had found the juice or pulp very efficacious in the treatment of ulcers, both cancerous and syphilitic; but notwithstanding this affirmation, we are inclined to believe that if any good effects have resulted from its application, the chief benefit was merely a correction of the fœtor attending these ulcerations, and the same we imagine to be the extent of its action in cases of gangrene. The bruised plant, however, applied to the skin, excites vesication and redness, and if continued for a certain length of time will produce ulceration, so as to answer very well for the formation of issues[¶].

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[*] Formed by boiling a handful of the herb in two pints of water until reduced one half.

[†] Westgöta Risa, p. 180.

[‡] Med. Remed. Brunsv. dom. p. 121.

[§] Flore Medicale, tom. iv. p. 165.

[||] Mémoires sur l'illecebra ou la petite Joubarbe, &c.

[¶] Waller's Brit. Dom. Herb. p. 336.

CLXX.

FRAGARIA VESCA.

Common Strawberry.

CLASS XII. ICOSANDRIA.—*Order* III. POLYGYNIA.

Nat. Ord. ROSACEÆ.

GEN. CHAR. *Calyx* ten-cleft; segments alternately smaller. *Petals* five. *Fruit* consisting of numerous minute nuts, placed upon a large fleshy, deciduous receptacle.

SPEC. CHAR. Calyx of the fruit reflexed; hairs of the peduncles wide-spreading; those of the pedicels appressed, silky.

SYNONYMES.

Latin	Fragaria vulgaris. *Bauh. Pin.* 326. Fragaria et Fraga. *Ger. Em.* 997. Fragaria. *Raii Hist.* 609; *Syn.* 254. Fraga vulgaris. *Park. Par.* t. 527. f. 6. Fragaria vesca. *Lin. Sp. Pl.* 705. *Eng. Fl.* ii. p. 414. *Eng. Bot.* t. 1524.
French	Fraisier.
Italian	Fragola; Fragaria.
Spanish. . . .	Fresal; Fresa.
Portuguese.	Fragaria.
German . . .	Erdbeere.
Dutch	Aardbezien.
Danish	Jordbœr.
Swedish . . .	Jordgubbar; Smultron.
Polish	Poziemka jagodi.

DESCRIPTION.—The root is perennial, cylindrical, scaly, and fibrous, sending out numerous creeping stolones or runners, which throw out fibres from the base, and produce new plants.

The stem is herbaceous, erect, simple, pubescent, and about six inches in height. The leaves are ternate, on long petioles, with two lanceolate acute stipulæ at the base; the leaflets ovate, obtuse, inciso-serrate, smooth above, glaucous, nerved, and clothed with silky hairs beneath. The flowers are axillary, solitary, on long drooping naked peduncles. The calyx is ten-cleft, spreading; persistent, and at length reflexed; five of the segments ovate, mucronate; the alternate five lanceolate, acute exterior. The petals are five, white, roundish-obovate, obtuse, repand, spreading, inserted into the calyx. The stamens are numerous, with rather short subulate filaments inserted into the calyx, tipped with cordate erect anthers. The germens are numerous, ovate, obtuse, aggregated on a roundish receptacle; the styles are rather thick, short, proceeding laterally from the germens, tipped with truncate stigmas. The fruit, called a berry, is roundish, obtuse, scarlet, rarely white, consisting of a fleshy succulent substance, (the enlarged receptacle,) upon the surface of which are scattered the pericarps or carpels, (usually called seeds). The carpels are small, shining, ovate, somewhat compressed, deciduous, containing a single pendulous seed. Plate 43, fig. 1, (*a*) vertical section of a flower; (*b*) fruit, cut longitudinally; (*c*) pistil; (*d*) carpel, isolated.

This well known plant, a native of most parts of Europe, is very abundant in woods and thickets in this country, flowering in May and June.

The generic name is derived from *fragro, to be fragrant*, because of the sweet odour of the fruit; and the specific appellation from *vescus, edible*. The English name Strawberry, appears to be a corruption of *stray-berry*, so called in allusion to the trailing runners, which stray, as it were, in all directions, from the parent stock. John Lydgate, (who died in 1483,) in his poem called "London Lyckpenny," writes the word *straberry*.

It is astonishing that so delicious a fruit as this should have been neglected by the ancients, for we can hardly suppose that it was unknown to them. Even Pliny scarcely mentions it, and Ovid and Virgil* only speak of it as a wild fruit. The moderns, however, have amply atoned for this neglect. The Strawberry may be considered truly indigenous to Britain, and has been aptly termed by the poet "plant of my native soil." It was formerly cultivated in what is now the heart of London. According to Shakspeare, Gloster, when contemplating the death of Hastings, asked the Bishop of Ely for Strawberries:—

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* Ecl. iii. v. 92. "humi nascentia fraga." This is the only occasion on which he mentions it, but the language is too characteristic to be misunderstood.

> "My lord of Ely, when I was last in Holborn,
> I saw good strawberries in your garden there."

Many of the fine varieties of garden Strawberry are obtained from *F. vesca;* others from the Hautbois (*F. elatior*); the latter has sometimes hermaphrodite flowers, but generally stamens and pistils on separate plants. The Pine Strawberry (*F. grandifolia*) is also remarkable for its diœcious flowers. There are other species more or less prized, for the choice and cultivation of which we must refer our readers to the Horticultural Transactions, &c.

GENERAL USES.—We need scarcely mention the use of strawberries for the dessert. They have this advantage over most other fruits, that they may be eaten to a great extent without producing injurious effects, and when taken alone, or with sugar, cream, wine, &c., they are equally pleasant and salutary. The fermented fruit yields an ardent spirit. Aken obtained from twelve gallons of it, one gallon and three pints of alcohol. In domestic economy, a grateful jam, wine, and vinegar, are also obtained from this fruit. The young and tender leaves dried in the shade afford a better substitute for foreign tea than many succedanea recommended for this purpose. The foliage is eaten by sheep and goats, but is not relished by cows, and is refused by horses and swine.

QUALITIES.—The root is slightly styptic, and when dried, bitterish. The leaves are herbaceous, and slightly astringent. The fruit has a sweet, fragrant, agreeable odour, and a slightly acidulous sweetish taste. It evidently contains mucilage and sugar, and according to Scheele, its acidity is owing to tartaric and malic acids, in equal proportions; but we have no precise analysis. Its fragrance passes over in distillation with water. A pleasant syrup may be made with the expressed juice; aud, "if the residuum be macerated in spirits of wine for some days, the tincture acquires an agreeable odour."*

Notwithstanding the pleasant and salutary effects of this fruit to most persons, instances are not wanting in which it has occasioned various eruptions, urticaria, fainting, and febrile symptoms †; but these phenomena are to be ascribed entirely to idiosyncrasy, or peculiar diathesis in certain individuals. To the same cause must be attributed the affections of the head, and a kind of intoxication from the free use of this fruit, mentioned by Cæsalpinus *. It is, however, not well adapted as an article of diet for leuco-phlegmatic persons with weak digestive powers, or for cold and humid subjects.

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* Bergius, Mat. Med. tom. i. p. 439.

† Vide Murray, App. Med. tom. iii. p. 143.

Medicinal Properties and Uses.—The fruit of Strawberry is mucilaginous, slightly acid, and saccharine, and when beaten into a pulp and dispersed in water, it forms an elegant beverage, which is both cooling and aperient. It contributes much to allay thirst, and is very suitable in acute and several chronic diseases, especially inflammatory, bilious, and putrid fevers, in the early stage of catarrh, inflammations of the viscera, and acute exanthemata. It has also enjoyed deserved reputation in diseases of the urinary apparatus, in inflammation of the kidneys, and blenorrhœa; and not less in pulmonary phthisis, and other affections accompanied by heat, thirst, dryness of the skin, and frequency of pulse. Again, taken in large quantities, it is one of the most useful medicinal aliments, and when continued for a long time, has produced the most happy effects in some formidable and obstinate diseases. Schulz † found it cure obstinate hectic, and Hoffmann ‡ to arrest pthisis; but we agree with Chaumeton in thinking that Hoffmann's cases were merely bronchial catarrh attended with hectic fever. Van Swieten § speaks of their salutary effect on furious maniacs from melancholy, their cooling and aperient tendency most unquestionably contributing to appease the nervous irritability of these patients. The Strawberry is not infrequently made the principal article of nourishment by some gouty subjects, and Linnæus || asserts that he had warded off the excruciating attacks of arthritis by partaking plentifully of this fruit. It is also useful in dissolving the tartarous concretions of the teeth. Lobb ¶ attributes no little lithontriptic power to it; but although it is not well established, that the calculi

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* De Plantis, p. 554.

† Diss. de fruct. horæis, p. 13, &c.

‡ Med. Syst. tom. iv. par. iv. p. 3.

§ Comment. tom. iii. p. 480.

|| Diss. de Fraga vesca.

¶ Diss. de Dissolv. Calcul, p. 36.

may be dissolved, yet the relaxing impression which the free use of this remedy makes upon the urinary organs, renders it useful by allaying pain, arresting spasms of the urethra and neck of the bladder; and acting thus, it may in some measure favour the expulsion of uric acid formed in the kidneys, and by augmenting the secretion of urine, it may probably prevent calculi, but not dissolve them.

The root and leaves of this plant are aperitive, diuretic, and deobstruent. They were formerly employed in jaundice, diseases of the urinary passages, diarrhœas, and various organic obstructions. Nebel * and others have recommended the application of the bruised herb to old ulcers; but its astringent property is too slightly developed to render it equal to others of the same natural family. We may add, that for medical purposes, the Wild or Wood Strawberry (*F. vesca sylvestris*), is decidedly preferable to the cultivated kinds.

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* Nebel in Eph. Nat. Cur. Dec. 3. ann. 3. Obs. 80. p. 116.

CLXXI.

CICHORIUM INTYBUS.

Wild Succory.

Class XIX. Syngenesia.—*Order* I. Polygamia Æqualis.

Nat. Ord. Compositæ.

Gen. Char. *Involucre* of eight scales, surrounded by five smaller ones at the base. *Receptacle* naked, or slightly hairy. *Pappus* sessile, scaly, shorter than the fruit.

Spec. Char. Flowers sessile, axillary, in pairs. Leaves runcinate.

SYNONYMES.

Greek	κιχωρη ; κιχωριον ; σερις πικρις.
Latin.	Cichorium sylvestre. *Bauh. Pin.* 125. *Ger. Em.* 284. *Park. Theatr.* 776. *Raii. Syn.* 172. Intubus sylvestris. *Cam. Epit.* 285. Seris sylvestris. *Lob.*, *obs.* 114. Cichorium Intybus. *Lin. Sp. Pl.* 1142. *Eng. Fl.* iii. p. 379. *Eng. Bot.* t. 539.
French. ..	Chicorée ; Chicorée sauvage.
Italian	Cicorea ; Radicchio.
Spanish. ..	Achicoria ; Chicoria.
German. ..	Cichorie ; Wegewart ; Hinllœuftwurzel.
Dutch	Cicorey ; Wilde Cicorey ; Suikerey.
Danish	Vœgvartrod.
Swedish. ..	Wœgwarda.
Polish	Podrosznik.
Russ	Zikorija.

Description.—The root is perennial, long, fusiform, somewhat branched, fleshy and contains a milky juice. The stem is erect, firm, tough, wand-like, angular above, bristly, and varies in height from sixteen inches to three feet. The radical leaves are numerous, spreading, long, petiolate, runcinate, rather rough; the cauline ones are smoother, gradually smaller, sessile, semi-amplexicaul, lanceolate, toothed only towards the base, fringed with bristly aristate hairs. The flowers are large, handsome, on very short peduncles, generally two or three together in the axils of the upper leaves of the stem and branches. The involucre consists of about eight elongated, erect, parallel, linear, ciliated scales, surrounded at the base with five smaller and shorter ones. The corolla is of a brilliant light blue colour, composed of numerous ligulate florets, truncate, and five-toothed at the summit, containing five stamens, having the anthers united into a cylinder. The germen is conical, hairy, supporting a filiform style, tipped with a bifid revolute stigma of a light blue colour. The receptacle is dotted, scattered with a few obsolete chaffy hairs. The fruit is obovate, angular, smooth, straw-coloured, crowned with a short scaly sessile pappus, and containing a single seed. Plate 43, fig. 3, (*a*) hermaphrodite floret, natural size; (*b*) fruit, natural size; (*c*) the same magnified.

This plant is very common on the borders of fields and road-sides, and in waste or uncultivated places, chiefly in a light gravelly or chalky soil, flowering in July and August.

The generic name is derived from the Greek κιχωρη, and that from the Arabic *chikouryeh*. The specific name Intybus is also supposed to owe its origin to the Arabic *hendibeh*. Dioscorides mentions three species, but gives no description; Theophrastus is more explicit. Celsus calls the wild Succory *Ambubeia*.

The garden Endive was formerly considered a variety of this species, altered by cultivation, but is now proved to be obtained from *C. Endivia*, a native of India. The wild Succory, when cultivated in rich soil, becomes much larger in all its parts; it gives rise to the varieties called in France *chicorée frisée*, *barbe de capucin*, and some others, which are produced by blanching.

General Uses.—Succory is applied to several useful purposes, both in rural and domestic economy. It has long been cultivated on the continent as food for cattle. It is much relished by sheep, is reputed to increase the milk and flesh of cattle that feed upon it, and when thoroughly dried, is made into hay and is very nutritious. It is easy of cultivation in most kinds of soil, resisting dryness, cold and frost, and the heaviest rains; moreover it grows fast, and supplies excellent fodder for cattle in the early spring. When cultivated in gardens and blanched, it becomes sweeter, more succulent, and is eaten in salads, or boiled as an addition to various dishes. The Egyptians cultivate this plant to a great extent, and make it one of their chief articles of food, and the ancient Greeks and Romans were not unacquainted with its culinary uses. Horace* adverts to its edible qualities, and Juvenal [*] and Virgil [†] were evidently well acquainted with it; the latter in his 1st Georgic says "*amaris intuba fibris.*" The root of Succory has been highly recommended as a substitute for coffee, and is employed to a considerable extent for the adulteration of that article. It is largly cultivated in France for this purpose, being dug up towards the end of autumn, well washed, cut into slices, then dried in an oven, roasted and pulverised. It forms a suitable and economical adjunct to coffee, but it possesses the bitterness [‡] without the aroma of that substance. It has been asserted that powdered root of roasted Succory is liable to spontaneous combustion when heaped together in large quantities, and Murray [§] quotés an instance of its taking fire in a shop at Magdeburg, by which the whole of the merchandize, together with five contiguous houses, were destroyed. Lastly, the powder of the dried roots may be converted into bread.

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* "——— Me pascunt olivæ
Me cichoria, levesque malvæ."
Car. lib. i. od. 31.

QUALITIES.—The fresh root is inodorous and very bitter; the latter quality depending on a milky saponaceous juice which flows from the cortical part, and which is more abundant and more powerful in the wild plant; this should consequently be selected for medical use. "The aqueous infusion of the dried root is limpid, lemon-coloured, inodorous at first, sweetish to the taste, subsequently bitter, and is not affected in colour by sulphate of iron." [‖] The properties of the root are but slightly impaired by keeping, and the inspissated juice, and the decoctions, whether aqueous or spirituous, evaporated to the consistence of an extract, are very little inferior to the recent preparations.

MEDICINAL PROPERTIES AND USES.—The root of Succory, by virtue of its bitter principle, strengthens the relaxed fibres of the stomach, promotes appetite, assists digestion, and often facilitates cutaneous transpiration and pulmonary expectoration. The roots and leaves are very useful aperients, acting mildly and without irritation, tending rather to abate than to increase heat: taken freely, they keep the bowels open, or procure a gentle diarrhœa; and when thus continued for some time, often prove useful in diseases resulting from visceral or organic obstructions*. The root appears to contain, in combination with its bitter milky juice, a slightly anodyne principle; hence it has been successfully given in jaundice, cachexia, hypochondriasis, melancholy, and hectic disorders†. Various practitioners have recommended it in phthisis, and in inflammatory states of the throat and chest. Some have exhibited it alone or with whey in lingering fevers; others assert, that a drachm of the powdered leaves, twice a day, has produced excellent effects in diseases of the skin, gout and rheumatism, while a third class speak of its faculty of subduing intermittents‡ when combined with an ammoniacal salt or any other exciting adjunct. The root and leaves may be made into cooling aperient drinks, and as such, may be advantageously allowed to patients labouring under bilious fevers, agues, inflammations, &c., since they often induce free urinary secretion and cutaneous perspiration. The flowers of Succory for a long period ranked among the *four cordial flowers*, and a water distilled from them, although inert, was much used in hæmorrhages, inflammation, and other diseases of the eye. With more propriety the seeds formed one of the *lesser cold seeds*, and the large quantity of oil they contain renders them useful as a demulcent.

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[*] "Cichorea, et teneris frondens lactucula fibris!"

[†] "Quoque modo potis gauderent intyba rivis." *Georg.* iv. v. 120.

[‡] It has been asserted, however, that one part of Succory powder to six parts of coffee, improves the flavour of that beverage and renders it more salubrious.

[§] App. Med. tom. i. p. 157.

[‖] Bergius Mat. Med. tom. ii. p. 650.

This plant may be made to enter into various preparations for use, and as it is not possessed of violent properties, considerable latitude may be given to the proportions. The usual dose of the expressed juice is from one to four ounces a day. Ptisans made from this herb are preferable to most glutinous decoctions; and the syrup of Succory, combined with syrup of rhubarb, forms a very good aperient for children, given in doses of half an ounce to an ounce. The extract made from the leaves may be administered in the dose of six to thirty grains. The decoction made by gently boiling half a pound of this herb in six pints of water till reduced to four pints, is reputed to be an excellent alterative diet drink, taken liberally. The dried root may also form a decoction, and this with the addition of liquorice is useful in pectoral complaints, and visceral and hepatic obstructions.

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* Lewis, Mat. Med. p. 209.

† Murray, App. Med. tom. i. p. 157.

‡ Geoffroy (Mat. Med. tom. iii. p. 322) states that he has known persons cured of intermittents by eating it freely as a salad.

CLXXII.

TANACETUM VULGARE.

Common Tansy.

Class XIX. Syngenesia.—*Order* II. Polygamia Superflua.

Nat. Ord. Compositæ.

Gen. Char. *Involucre* hemispherical, imbricated. *Receptacle* naked. *Florets* of the ray trifid, obsolete, sometimes wanting. *Fruit* crowned with a membranous pappus.

Spec. Char. Leaves bipinnatifid, inciso-serrate.

SYNONYMES.

Latin.	Tanacetum vulgare luteum. *Bauh. Pin.* 132. Tanacetum. *Ger. Em.* 650. *Raii Syn.* 188. *Park. Par.* t. 485. f. 1. Artemisia monoclonos. *Fuchs.* 46. Athanasia, seu Tanacetum. *Dalech.* 955. Tanacetum vulgare. *Lin. Sp. Pl.* 1184. *Eng. Fl.* iii. p. 405. *Eng. Bot.* t. 1229.
French.	Tanaise.
Italian	Tanaceto.
Spanish.	Tanaceto; Atanasia.
Portuguese.	Tanasia.
German.	Rainfarn.
Dutch	Rynvaar; Boere Wormkruid.
Danish	Rheinfan.
Swedish.	Renfana.
Polish	Wrotycz.
Russ	Dikaja riabina.

Description.—The root is perennial, long, creeping, and fibrous. The stems are erect, strong, angular, leafy, slightly branched towards the summit, smooth, often tinged with purple, and rise to the height of a foot, varying to two or three feet. The leaves are numerous, alternate, amplexicaul, spreading but little, bipinnatifid, with numerous deep, oblong, incised, and serrated segments; the lowermost are doubly pinnate, with trifid pinnæ, decurrent on the petiole as far as the next leaflet; the whole are deep green, and destitute of pubescence, but rough with excavated points, paler beneath. The flowers are yellow, and constitute a terminal flat corymb. The involucre is hemispherical, composed of numerous imbricated, appressed, linear-lanceolate, acute scales, scariose at the summit. The florets of the ray or circumference are few and inconspicuous, and often wanting; they are ligulate, three-toothed at the apex, and contain merely a pistil. The florets of the disk are numerous, forming a convex surface, each perfect, tubular, five-cleft, including five stamens with united anthers, an oblong, glabrous, naked germen, supporting a setaceous style, and a bifid revolute stigma, rather longer than the corolla. The receptacle is convex and naked. The fruit (an achenium) is small, obovate, or oblong, angular, crowned with a five-sided membranous pappus, and containing a single seed. Plate 43, fig. 4; (*a*) florets of the circumference and disk, magnified.

This plant, so well known in gardens, is also found wild in this country on hilly pastures, borders of fields, and road-sides, generally in large patches, flowering in July and August.

The name Tanacetum is considered by Pliny* to be derived from *Tannacus,* a synonyme of Parthenius: others think it altered from *athanasia.*

A variety with curled leaves is sometimes seen in gardens, and has rather a more pleasant odour than the ordinary Tansy, but is not superior as a medicinal plant.

General Uses.—The young leaves of Tansy are shredded down and employed to give colour and flavour to puddings, and as an ingredient in omelets and cakes; they have also been mentioned as a substitute for hops. According to Withering, meat rubbed with this herb is effectually preserved from the attacks of the flesh-fly; it is likewise reputed to drive away bugs from a bed in which it is laid. The Finlanders prepare with the expressed

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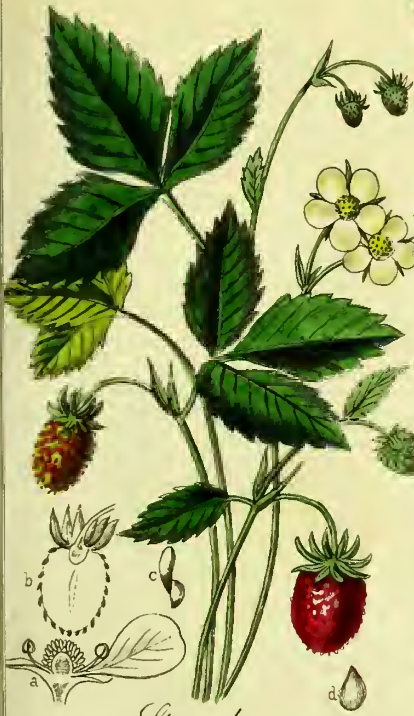
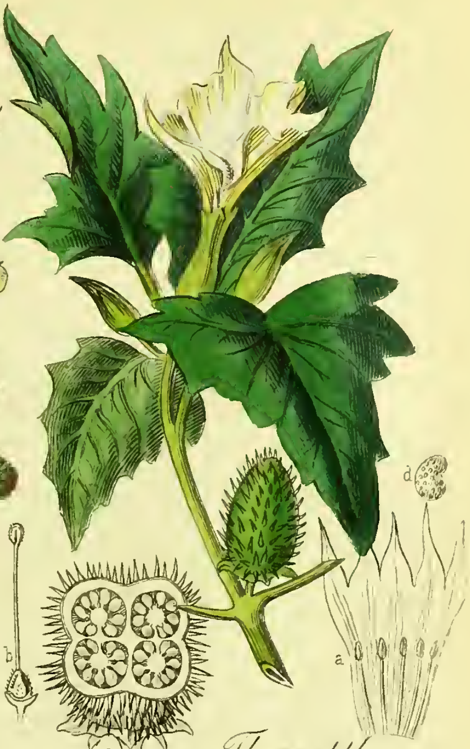
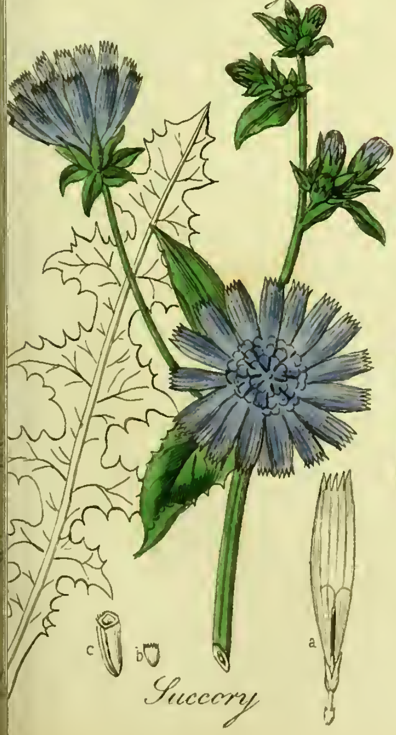
* Hist. lib. xxi. c. 30.



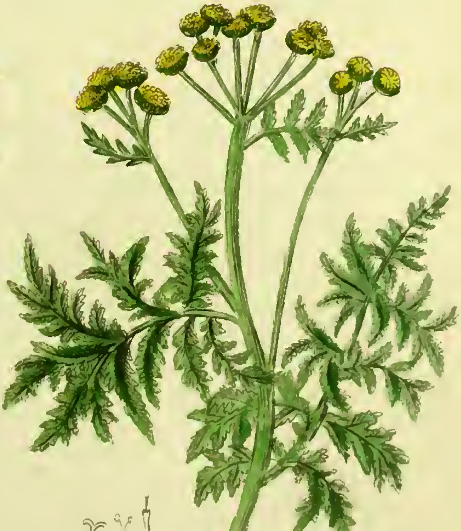
Strawberry



Thorn-apple



Succory



Tansy

juice of the shoots a green colouring matter, which they use to dye their clothes. The foliage is eaten by cows and sheep, but refused by horses, goats, and swine.

QUALITIES.—The leaves and flowers have a peculiar, strong, camphorous odour, not very disagreeable, and a warm, bitter, sub-acrid, and aromatic taste; the latter are rather more powerful and agreeable. These properties are not much impaired by desiccation. The seeds have a strong fragrant odour, and a bitter taste. The virtues of the herb are obtained both by water and spirit, most perfectly by the latter. The watery infusion has the taste and smell of the plant, and is rendered nearly black by sulphate of iron. The tincture made from the leaves is of a beautiful green colour: that from the flowers of a bright pale yellow. The distilled water is fragrant; and with it passes over a greenish yellow essential oil, having a powerful odour. "Cartheuser obtained from the flowers one-fourth of an aqueous, and one-sixth of a spirituous extract."[*]

MEDICINAL PROPERTIES AND USES.—The leaves, flowers, and seeds of the Tansy have been considered eminently tonic and stimulant, consequently stomachic, carminative, vermifuge, sudorific, emmenagogue, and antispasmodic. Their action is particularly directed to the stomach, intestines, cutaneous exhalants, uterus, and the nervous system in general. It has been essayed in intermittent fevers[†], but the good effects are not very well marked. In dropsy it is said to be happily substituted for wormwood[‡]. Hoffmann[§] and Rosenstein[||] consider the decoction an excellent lavement for bringing away ascarides; but the seeds, in the dose of ten to thirty grains, are reputed to be more powerfully vermifuge. In chlorosis accompanied with vertigo and epilepsy, it appears to be of service, especially when these diseases arise from general debility, or from the presence of worms. Its effects in gout have also been highly extolled[¶], and Dr. Cullen[**] says, "I have known several who have taken it without any advantage, and some others who reported that they had been relieved from the frequency of their gout." Moreover, it has been much esteemed as a remedy in severe colics, and in calculous complaints.

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[*] Bergius Mat. Med. tom. ii. p. 664.

[†] Pontedera in Hall. Hist. st. helv. n. 132.

[‡] Eph. N. C. Dec. 2. Ann. 2. Obs. 112. p. 267, &c.

[§] Med. Syst. tom. iv. p. ii. p. 333.

[||] Bskd. cap. de vermibus.

[¶] Clark's Essays and Obs. phys. and lit. vol. iii. p. 438.

[**] Mat. Med. vol. ii. p. 80.

In the days of Gerard[*] it was a common custom, in the spring season, to make cakes of the young leaves and eggs, and these were eaten with the notion that they purged the body of its foul humours; so at the period Miller[†] wrote, "the good wives" are reported to have made a syrup with the juice for the laudable purpose of preventing miscarriage. The flowers were formerly used as an anthelmintic[‡], and in the dose of a drachm in powder, were given with success in hysteria[§].

Tansy has been applied externally in various forms, and for various purposes,—as for scurf, tetters, and other diseases of the skin, for sprains, contusions, and the like. It is also useful in anodyne fomentations, combined with chamomile flowers, feverfew, &c. Linnæus[||] states that the Lapland women use it in the form of baths to facilitate parturition. It may be given in powder from half a drachm to a drachm at a dose; in lavements from one to three drachms' strength; or of the expressed juice, from one to four ounces. The infusion made in the usual manner may be given in the dose of a cupful every two hours, as a diaphoretic. The essential oil in the quantity of a few drops on sugar will often give relief in colic and flatulence. Other preparations of the herb may also be employed, such as the aqueous, or spirituous extract, and the tincture. The dose of the seeds is from half a drachm to a drachm; they may be taken bruised, in a glass of wine.

[*] Herbal, p. 651.

[†] Miller Bot. p. 432.

[‡] S. Pauli, Quadrip. p. 566.

[§] Gherli Osservazioni rare, Cent. i. p. 188.

[||] "Vidi uxores Novaccolarum per Lapponiam et Rusticorum in Westrobothnia sollicitè colligere hanc plantam et exsiccare, nec in quem finem, facile scire licuit; tandem edoctus fui fœminas in iisdem locis inde conficere balnea vaporis pro emolliendis adpropriatis membris instante partu atque pro eodem facilius excludendo."—*Fl. Lapp.* p. 243.

CLXXIII.

CARDUUS MARIANUS.

Lady's Thistle, or Milk Thistle

Class XIX. SYNGENESIA.—*Order* I. POLYGAMIA ÆQUALIS.

Nat. Ord. COMPOSITÆ.

GEN. CHAR. *Involucre* tumid, imbricated with spinous scales. *Receptacle* hairy. *Pappus* deciduous, rough.

SPEC. CHAR. Leaves amplexicaul, waved, spinous, the radical ones pinnatifid. Scales of the involucre subfoliaceous, recurved, spinous at the margin.

SYNONYMES.

Greek	σιλυβον.
Latin.	Carduus albus maculis notatus vulgaris. *Bauh. Pin.* 381. Carduus Mariæ. *Ger. Em.* 1150. *Raii Syn.* 195. *Trag.* 850. Carduus Mariæ vulgaris. *Park. Theatr.* 970. Carduus leucographus. *Dod. Pempt.* 710. Silybum marianum. *Gœrtn. Fruct.* ii. 378. Carduus Marianus. *Lin. Sp. Pl.* 1153. *Eng. Fl.* iii. p. 386. *Eng. Bot.* t. 976.
French	Chardon-Marie ; Chardon notre-dame ; Chardon argenté.
Italian . ..	Cardo di Maria ; Cardo latteo.
Spanish ..	Cardo Mariano ; Cardo lechal.
German ..	Mariendistel ; Frauendistel ; Milchdistel.
Dutch	Mariendistel ; Onze Vrouwendistel ; Melkdistel.
Danish....	Marientidsel.
Swedish . ..	Sempertin.
Bohem.....	Kardus Marie.
Polish	Ostropest.

DESCRIPTION.—The root is biennial, long, cylindrical, thick, and fibrous. The stem is erect, firm, striated, branched, downy, naked above, from three to five feet in height. The leaves are alternate, large, sinuated, spiny, beautifully marbled on the upper side with white veins; the radical ones are pinnatifid, one foot or more in length, spreading on the ground; those of the stem are sessile, amplexicaul, spreading, ovate-lanceolate. The flowers are solitary at the summit of the branches, large and purple. The involucre is composed of numerous imbricated recurved scales, spinous at the margin and end; the lowermost roundish, edged with spines, smaller than those above, which are concave, channelled, recurved, and produced at the summit into a spreading concave leaflet, tapering into a rigid straight spine, the upper and innermost are lanceolate, ciliated, and destitute of spines. The florets are perfect, funnel-shaped, with a whitish curved tube, and an erect limb of five equal linear segments, globose at the base and nectariferous. The filaments are very short and slender, supporting purplish anthers, united into a tube. The germen is ovate, compressed, whitish, surmounted by a filiform style, longer than the stamens, slightly hairy above, terminated by a bifid stigma. The receptacle is pilose with flat glabrous hairs. The fruit consists of achenia, which are oval, slightly gibbous, angular, blackish or mottled, shining, smooth, crowned with a simple, subulate, rigid, somewhat oblique pappus. Plate 44, fig. 1; (*a*) floret; (*b*) fruit, crowned with the pappus.

This plant is a native of the south and middle of Europe, and is not uncommon in several parts of England, on banks, rubbish, and by road-sides, flowering in June and July.

According to Theis, the generic name is derived from the Celtic *ard*[*], *a point*, in reference to the spiny leaves. The specific name has been given in accordance with the idea formerly cherished, that the white veins on the leaves were caused by a drop of the Virgin Mary's milk[†]; hence also the English terms, *Lady's Thistle*, i. e., *our Lady's Thistle*, and *Milk Thistle*. It is generally supposed, that the σιλυβον mentioned by Dioscorides is identical with this plant, and Gœrtner has taken it as a type of a new genus, which he separates from the *Cardui.*

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[*] Whence also the Greek αρδυς; the Latin *arduus* and *cardo;* and the English *cardinal.*

[†] There is, however, an heretical variety which is destitute of these milky veins; in this case, the large recurved scales of the involucre form a sufficient distinctive character.

The noble appearance of this plant, and the elegant markings of its leaves, render it suitable for cultivation in gardens where there is plenty of room. It is considered by some the emblem of Scotland, and as such is designated by the poet,—

> "Proud thistle! emblem dear to Scotland's sons,
> Begirt with threatening points, strong in defence,
> Unwilling to assault."

There is, however, this objection to its being considered a national emblem,—viz., that it is rare in Scotland. The welted Thistle, (*C. acanthoides,*) is, perhaps, better entitled to the honour.

Qualities and general Uses.—The root is esculent in the spring of the second year, like salsafy, and the young tender leaves are eaten in salads, or boiled as greens. The tender stalks peeled and soaked in water to extract their bitterness, are said to furnish an excellent dish, and the receptacle of the flower may be used as a substitute for artichokes *. Rabbits are very fond of the leaves. In Apulia, the whole plant is used as a fodder for cattle. The seeds are the favourite food of goldfinches.

The fruit, called seed, is covered with a smooth epidermis, clouded with white and dark brown, and contains a bitterish oily seed: when bruised and infused in water it affords an oily emulsion. The leaves are inodorous, and have an herbaceous, bitterish taste, when masticated, tinging the saliva green; their aqueous infusion is dull green, changing to blackish brown by the addition of sulphate of iron †. According to Marcgraf, the leaves contain an essential salt, analogous to the tartar of wine. The bitter principle of the plant seems to be owing to extractive combined with gum.

Medicinal Properties and Uses.—The medical value of this plant is rather uncertain, some writers considering it extremely efficacious, while others describe it as quite inert. The properties attributed to it are tonic, deobstruent, sudorific, and diuretic. Ettmuller ‡ and Geoffroy highly extol the effects of the seeds in pleurisy, catarrh, and rheumatic pains of the chest; the former, moreover, recommends it as diuretic and emmenagogue, useful in leucorrhœa, and when combined with anise or fennel seeds, for promoting the secretion of milk in the breasts of nurses. A still more potent quality, ascribed to them by Lindanus*, is that of curing hydrophobia by virtue of their sudorific effects; for this purpose, he recommends one or two drachms of the powdered seeds in wine. Matthiolus asserts that a decoction of the leaves and root is useful in dropsy, jaundice, and nephritis, and, according to Tournefort †, the expressed juice of the leaves is febrifuge in the dose of four ounces, given at the commencement of the paroxysm of intermittents.

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* "In some parts of France the Lady's Thistle is known by the name of Wild Artichoke."—*Flore Med.* tom. ii. p. 206.

† Bergius Mat. Med. tom. ii. p. 655.

‡ Opera, cur. J. C. Westphali, p. 534, fol. 1696.

Externally, the decoction of the plant and the bruised leaves are esteemed useful applications to ulcers, &c., and are said to have proved serviceable in cancer.

We consider the true character of this Thistle to be that of a slight tonic, stomachic, and diaphoretic, by virtue of the bitter principle which it possesses in common with other plants of the natural tribe *Cynaraceæ*, particularly the *Carduus benedictus*, or *Blessed Thistle*, so highly extolled by the ancients as a tonic, sudorific, and deobstruent. It may be substituted for the latter, and be suitably combined with the Burdock (*Arctium Lappa*), and other allied plants. The seeds form by trituration with water an elegant emulsion, which may be useful in catarrhal affections. Decoctions or infusions of the leaves, reputed to be useful in visceral obstructions, must be made of considerable strength, and given in large doses, to be of any service. The extract made by inspissating the expressed juice promises to be beneficial as a deobstruent; the tincture and wine may be considered stomachic.

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* In Geoffroy, Mat. Med. tom. iii. p. 262.

† Pl. de Paris, ii. p. 143.

CLXXIV.

DATURA STRAMONIUM.

Common Thorn-apple.

Class V. Pentandria.—*Order* I. Monogynia.
Nat. Ord. Solaneæ.

Gen. Char. *Calyx* tubular, deciduous. *Corolla* funnel-shaped, plaited. *Capsule* incompletely four-celled, four-valved.

Spec. Char. Stem herbaceous. Leaves ovate, angular-sinuate, glabrous. Fruit oval, erect, spinous.

SYNONYMES.

Greek	στρυχνος μανικος.
Latin	Solanum fœtidum, pomo spinoso, &c. *Bauh. Pin.* 168. Stramonium spinosum. *Ger. Em.* 348. Stramonium majus album. *Park. Parad.* 360. *Raii Hist.* 748. Tatula. *Cam. Epit.* 176. Stramonium fœtidum. *Scop. Carn.* 252. Datura Stramonium. *Lin. Sp. Pl.* 255. *Eng. Fl.* i. p. 314. *Eng. Bot.* 1288.
French	Stramoine ; Pomme epineuse ; Herbe aux sorciers.
Italian	Stramonio ; Pomo spinoso.
Spanish....	Estramonio.
Portuguese.	Estramonia.
German ...	Stechapfel ; Stachelnusskraut ; Tollkraut.
Dutch	Doornappel ; Dolappel.
Danish	Pügaeble ; Galurt.
Swedish ...	Spikklubbœrt.
Polish	Psinki ; Tondera.
Russ......	Durnischnik.

Description.—The root is annual, woody, branched, whitish, and fibrous. The stem is herbaceous, thick, cylindrical, fistular, smooth, pale shining green, simple below, dichotomously branched above, and rises to the height of two feet. The leaves are alternate, large, spreading, unequal, petiolate, somewhat succulent, ovate-triangular, acute, glabrous, angled and sinuate at the margin, dark lurid green above, paler beneath, and marked with strong branching veins. The flowers are large, solitary and axillary, supported on short erect peduncles. The calyx is long, tubular, pale green, acutely pentangular, five-toothed at the summit, with ovate, acute, erect, keeled segments. The corolla is white, funnel-shaped; the tube cylindrical, greenish white, longer than the calyx, gradually expanding into a pentagonal, five-cleft, plaited limb; the segments roundish, shallow, tapering into a subulate apex. The five stamens have linear-subulate, erect filaments, shorter than the corolla, inserted in the tube, and are tipped with erect, ovate-linear, brownish, compressed anthers, which open longitudinally. The germen is superior, ovate-pyramidal, obtuse, hispid, supporting a white cylindrical style as long as the stamens, crowned with a clavate, obtuse, bilobed stigma. The fruit is an oval, erect capsule, armed with numerous, nearly equal, strong, pungent spines, and subtended at the base by the remains of the calyx; it has a fleshy exterior or bark, and is internally divided at the lower part into four cells, but two only of the dissepiments reach the top, opening by four valves, and containing many reniform, compressed, blackish, punctured seeds, which are attached to thick, salient, dotted placenta. Plate 43, fig. 4; (*a*) corolla, opened to shew the stamens; (*b*) pistil; (*c*) horizontal section of the fruit; (*d*) seed magnified.

Thorn-apple is a native of America *, and has from thence been carried to Europe, where it is naturalized in many places. The seeds were brought to this country from Constantinople by Lord Edward Zouch, and given to Gerard, who raised plants from them, about the year 1590. It is only found in the vicinity of towns on dunghills and waste ground, being the outcast of gardens. It flowers in July and August.

The generic name is derived from the Arabic *Datora*, or *Tâtôrah;* while Stramonium is a corruption of στρυχνομανικον, supposed to designate this plant in the writings of Dioscorides. The common name, *Thorn-apple*, obviously refers to the spiny fruit. It is called in the United States *Apple of Peru*, *Devil's Apple*, and *Jamestown-weed*[*].

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* Bigelow, (Amer. Med. Bot., vol. 1. p. 20,) however, does not consider it a native of the United States. He says, there are two varieties common with them;—the one, corresponding with the English plant; the other, distinguished by a dark reddish stem, dotted with green and purplish flowers striped with deep purple inside. This he considers the *D. tatula* of Linnæus.

There are several other species of Datura which partake more or less of the qualities of the Stramonium, as *D. fastuosa*, generally used in Egypt and India; *D. tatula*, a native of Peru; *D. Metel*, of Arabia and India; and *D. ferox*, of China.

The Stramonium is commonly associated with witchcraft, poisoning, and death. Harte, speaking of the plants growing around the palace of Death, says—

> " Nor were the nightshades wanting, nor the power
> Of thorned stramonium, nor the sickly flower
> Of cloying mandrakes, the deceitful root
> Of the monk's fraudful cowl, and Plinian fruit."

QUALITIES.—The plant has a disagreeable narcotic odour, which has been compared to that of bean meal, and is more developed when the leaves are rubbed between the fingers. Bergius, after being for some time exposed to the odour of the recent plant, and from chewing one of the leaves experienced a kind of intoxication like that produced by the fumes of tobacco. The foliage is bitter to the taste, less nauseous when chewed, and tinges the saliva of a deep green colour. Both water and alcohol take up the virtues of the plant. "The watery infusion is transparent, with a very pale yellow hue, which is dissipated by acids, but very much deepened by the alkalies. It throws down whitish precipitates with acetate of lead, and a black precipitate with nitrate of silver. Solution of sulphate of iron strikes a deep olive colour, and muriate of mercury renders it milky, but neither is precipitated for a considerable time."[†] Bergius[‡] observed in the extract crystalline particles resembling nitre, and which crackled and flashed in the flame of a candle, emitting narcotic fumes. The fresh leaves, according to Promnitz, yield of extractive sixty, chlorophylle sixty-four, albumen fifteen, resin twelve, gum fifty-eight, and of different salts twenty-three parts. To these may be added a volatile matter, which, according to Dr. Thomson, is carbonate of ammonia, and a narcotic principle, which, however, is most abundant in the seeds, in which Brandes has discovered it combined with malic acid, and has named it *Daturine* or *Daturia.* The Daturia of Brandes is a volatile oily substance, smelling strongly of the plant itself; but that of Geiger and Hesse is a colourless crystalline alkaloid, of an acrid taste, resembling tobacco. Moreover, an empyreumatic oil has been obtained from Thorn-apple, similar to that of Henbane.

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[*] Kalm, in his travels in North America, says, "the Datura Stramonium grows in great quantities in all the villages; its height is different, according to the soil:—in a rich soil, it grows to the height of six or eight feet, but in hard or poor ground it seldom comes up to six inches."

[†] Thomson's Dispensatory, ed. 8. p. 330.

[‡] Mat. Med. tom. i. p. 121.

POISONOUS PROPERTIES.—We are not aware that the foliage of Stramonium is eaten by any animal; even its odour is reputed noxious, and we are credibly informed that cage-birds have died from being accidentally placed near a bundle of the fresh gathered plant; and that bees have been seen to fall stupified and lifeless in their search for the nectar of the flowers.

The stupifying effects of the Thorn-apple have led to its employment prior to the commission of some of the foulest acts of villainy. We are told that the individual to whom it has been administered will look on during the perpetration of the most daring acts of rapine on his own or his neighbour's property, utterly regardless of the theft, and when consciousness returns, has no recollection of any thing that has passed *.

The Turks are said to use the extracts of the herb or the seeds as a substitute for opium, and the Chinese infuse the seeds of *D. ferox* in beer, to produce intoxication and delirium, the use of this liquor is, however, forbidden by their laws †.

The physiological effects of the extract have been determined by Orfila. He found that half an ounce killed a dog within twenty-four hours after being swallowed; that a quarter of an ounce applied to a wound killed another in six hours; and that thirty grains killed another when injected into the jugular vein. The symptoms were purely nervous, and not very prominent ‡. Orfila concludes, that, like Belladonna, it acts through the blood-vessels, and probably on the brain.

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* Murray (*Mat. Med.* tom. i. p. 672,) adds, "A mulierculis infidis Turcis gynæcis inclusis, ad consopiendos et dementandos maritos, quo aliorum, magis desideratorum, amplexibus satientur, usurpari, et Hamburgi a vetulâ sic honestam feminam, quo se inscia mæchum admitteret intoxicatum fuisse, narratur."

† Spratt's Hist. of the Roy. Soc. 162.

‡ Christison on Poisons, ed. iii. p. 768.

The effects of a poisonous dose on the human subject, are, flushed face, great delirium and stupor, often accompanied with immoderate and incoherent talking, and the most absurd and violent gestures; to these may be added, dilatation of the pupil, sometimes spasms and convulsions, and occasionally palsy. It is also remarkable, that in some cases, symptoms closely resembling those of hydrophobia, such as biting, foaming at the mouth, and strangulation at the fauces, have been observed. "The most complete account of the phenomena of poisoning with Stramonium, when fatal, is given by Mr. Duffin. A child of his own, two years old, swallowed about 100 seeds, without chewing them. Soon after she became fretful, and like a person intoxicated; in the course of an hour, efforts to vomit ensued, together with flushed face, dilated pupils, incoherent talking, and afterwards wild spectral illusions and furious delirium. In two hours and a half she lost her voice and the power of swallowing, evidently owing to spasms of the throat. Then croupy breathing and complete coma set in, with violent spasmodic agitation of the limbs, occasional tetanic convulsions, warm perspiration, and yet an imperceptible pulse. Subsequently, the pulse became extremely rapid, the belly tympanitic, and the bladder paralysed, but with frequent involuntary stools, probably owing to the administration of cathartics, and death took place in twenty-four hours. It is remarkable, that no seeds were found in the intestinal canal after death."* Dr. Hooker†, of America, relates a case in which an Irish family consisting of five persons were poisoned by eating a quantity of the herb boiled in mistake for greens, with corned beef. The family consisted of Mr. T., his wife, and three children, the youngest about five years of age. He writes, "I saw them about an hour after dinner; the countenances had a wild idiotic expression,—the pupils widely dilated,—the sensorial functions perverted,—and the muscular system subject to an irregular agitation. The appearance of the family was extremely ludicrous. The children were laughing, crying, singing, dancing, and playing all imaginable antic pranks. They had no correct estimation of distances or the size of objects,—were reaching their hands to catch hold of things across the room, and again running against persons and things which they appeared to view as distant. The nail-heads in the floor were pieces of money which they eagerly tried to pick up. A boy, apparently fancying himself undressed, caught a hat belonging to a student, thrust his foot into it, pulled with both hands on the brim, and began to fret that he could not get into it. The parents frequently called on the children to behave themselves, but their own actions being equally eccentric, they afforded a ridiculous exhibition of family government. Sulphate of zinc with ipecacuanha brought from the stomach a large quantity of the herb, and under the use of camphor, carbonate of ammonia, and a warm aromatic infusion, the symptoms soon subsided." The attendant circumstances of the foregoing case are interesting in a forensic point of view, but we have no space for the details. Additional instances of poisoning by this narcotic vegetable, may be found in the undermentioned works *.

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* Christison, *l. c.* from Med. Gazette, xv. p. 320.

† Boston Med. and Surg. Journal, *Aug.* 31, 1836.

Treatment.—As the Thorn-apple is a common plant in gardens, the seeds may be inadvertently swallowed by children. In such cases, the prompt exhibition of an emetic, as sulphate of zinc, is advisable. When the narcotic symptoms are increasing, the affusion of cold water upon the head is highly useful in rousing the system and aiding the operation of the emetic. As there is generally determination of blood to the head, bleeding is indicated. The vegetable acids have been successfully administered, and Dr. Christison mentions a case in which, after a strong glass of lemonade, vomiting was produced, and the symptoms gradually receded, when emetics had been given without effect, and little amendment had been obtained from blood-letting, leeches to the temples, cold to the head, or purgatives. The exhibition of camphor lavements is stated to be highly beneficial.

Medicinal Properties and Uses.—The ancients can scarcely be said to have used the Stramonium medicinally; indeed, its deleterious properties have been a formidable barrier to its employment. It has been reserved for the physicians of the last century to discover, that the dose, and the suitable administration of it, may convert the most deadly poison into a useful medicine. Störck † was the first to institute experiments on the therapeutical action of this plant in mania, epilepsy, and convulsions, in some of which cases it proved beneficial. Greding ‡ and others have made numerous trials of it in these affections, and, although in some cases it disappointed their expectations, in others it produced the most salutary effects. Bergius § says, "I have often known maniacs completely restored by the use of the extract of Stramonium continued for some time. I have also frequently cured the delirium supervening to parturition with this extract after other remedies had failed, and have found it equally efficacious in the melancholy produced by excessive grief. If a seton in the neck be combined with this remedy in mania, the disease is more quickly subdued."

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* Fowler, in Edin. Med. and Philos. Commentaries, vol. v. p. 161.—Huckel, in Comm. Noric. 1744, p. 14.—Swaine, Essays and Observ. Phys. and Lit., vol. ii. p. 247.—Gmelin, Gesch. der Pflazengifte, 421.—Edinburgh Med. and Surg. Journal, xv. p. 154.—Journal de Chim. Med. vi. p. 722.—Orfila, Toxicol. Gen. ii. p. 247.

† Libell. de Stramonio, Hyoscyamo, &c. *Vindob.* 1762.

‡ In Ludwig Advers. Med. Pract. v. i. p. 259.—Wedenburg Diss. de Stramonii usu. *Ups.* 1772.—Strandenberg om Chron. Sjukd. p. 16.

§ Mat. Med. tom. i. p. 122.

Some of the American physicians speak highly of its effects in epilepsy. Dr. Ives, of Newhaven, employed it successfully in several cases of this disease, and others have found it useful in chorea, dysmenorrhœa, and sciatica*. Dr. Marcet † has communicated the result of his experience with it in acute pains of different kinds; viz., in sciatica, in supposed disease of the spine followed by paraplegia, in cancer of the breast, in a case of acute uterine disease; and in one instance of tic douloureux. Professor Bigelow ‡ states, that in a case of tic douloureux of long standing, he found the extract, taken in as large a dose as the stomach would bear, afford decided relief. In asthma, an oxymel of the seeds especially has proved very serviceable. Dr. Barton §, of Philadelphia, strongly recommends the exhibition of the seeds in chronic rheumatism,—and, indeed, in the acute stage of the disease, it may be employed in combination with diaphoretics, when opium is inadmissible. In fine, as a narcotic, Stramonium is generally allowed to be preferable to the other *Solaneæ,* and the tincture is perhaps the best substitute for opium. In general, it rather relaxes than constipates the bowels, and frequently promotes perspiration and the flow of urine; but great care is necessary in its employment, untoward effects having followed even an ordinary dose. One of the best premonitory symptoms is a disordered state of vision. Dr. Barton found that, when the dose of the dried herb was increased to thirty grains, it dilated the pupil and produced paralysis of the eyelids; effects which were removed by a blister.

The Thorn-Apple has attracted much attention both in this country and in America, as an efficacious palliative in asthma and some other affections of the lungs, by inhaling the fumes or smoking the plant in the same manner as tobacco. In cases of pure spasmodic asthma, it often affords the most astonishing and speedy relief. It produces an increased secretion of saliva, which is to be swallowed, and facilitates expectoration; excites a sensation of warmth in the chest, and its use is commonly followed by drowsiness. To produce its proper effect, the fumes should be fully inhaled, and not merely received into the mouth, and then puffed out again. Mr. Waller * recommends a mixture of one-third of the dried leaves, with two-thirds of the herb tobacco, mentioned under the article *Coltsfoot*. He has seen great benefit result from this combination, and recommends it to such as labour under asthma, or troublesome irritating coughs.

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* See Bigelow's Amer. Med. Bot. vol. i. part i. p. 22.

† In Medico-Chirur. Trans. vol. vii.

‡ Med. Bot. *l. c.*

§ Coll. Mat. Med. p. 46.

The root of Thorn-Apple is given by the native practitioners in the Carnatic in violent headaches.

As an external application, the foliage of this plant has its advocates. It has been applied in the form of decoction or cataplasm to chancres and cancer, to burns † and hæmorrhoids, to certain inflammatory and painful tumours, and is said to dissipate indurated milk in the breasts of nurses. The ointment is a useful application to hæmorrhoidal tumours.

The dried and powdered leaves may be given in the dose of two or three grains, gradually increased. Störck's extract was made from the inspissated juice of the plant, the commencing dose of which is one grain. The British Pharmacopœias order an extract from the seeds as follows:

EXTRACT OF THORN-APPLE ‡.

Take of	Thorn-Apple seeds........	fifteen ounces.
	Boiling water	one gallon.

Macerate for four hours in a covered vessel near the fire; take out the seeds, bruize them in a stone mortar, and return them to the liquor. Then, boil down to four pints and strain the liquor while hot. Lastly, evaporate it until it acquire a proper consistence.

Dose.—Half a grain to two grains in the form of pills; increasing the quantity by degrees to ten or twelve grains.

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* Brit. Dom. Herb. p. 335.

† Our old friend, Gerard, appears entitled to the discovery of its use in burns, &c. He says, "the juice of Thorn-Apple boiled with hogs-grease to the form of an vnguent or salue, cures all inflammations whatsoever, all manner of burnings or scaldings, as well of fire, water, boiling lead, gunpowder, as that which comes by lightning, and that in very short time, as my selfe have found by my daily practice to my great credit and profit."—*Herb. em.* p. 349.

‡ Pharm. Lond. 1836.

VINOUS TINCTURE OF THORN-APPLE *.

Take of	Thorn-Apple seeds, bruised	two ounces.
	Malaga wine	eight ounces.
	Alcohol	one ounce.

Macerate in a gentle heat for a few days, express, and filter.

This preparation is a valuable hypnotic, preferable to the extract, and according to Hufeland, superior even to opium.—The Dose is from six to twenty drops in any convenient vehicle.

ALCOHOLIC TINCTURE OF THORN-APPLE †.

Take of	Thorn-Apple seeds	two ounces.
	Brandy	one pint.

Digest for six days and filter.

Dose, from fifteen to forty drops.

By some an oxymel of the seeds has been recommended for asthma, &c., as the vinegar modifies the narcotic quality, and the honey increases its expectorant properties.

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* Pharm. Batava, ed. Niemann.

† Pharm. of the United States.—*Boston,* 1820.

CLXXV.

THYMUS SERPYLLUM.

Wild Thyme.

Class XIV. Didynamia.—*Order* I. Gymnospermia.

Nat. Ord. Labiatæ.

Gen. Char. *Calyx* with ten ribs, tubular, two-lipped; upper lip three-toothed; lower lip bifid; throat hairy. *Corolla* with the upper lip erect, nearly plane, notched; lower lip patent, trifid.

Spec. Char. Flowers capitate. Stems branched, decumbent. Leaves plane, ovate, obtuse, entire, petiolate, ciliate at the base.

SYNONYMES.

Greek.....	ερπυλλον.
Latin....	Serpillum vulgare minus. *Bauh. Pin.* 220. *Park. Theatr.* 8. Serpyllum vulgare. *Ger. Em.* 570. *Raii Syn.* 230. *Dod. Pempt.* 277. Serpyllum. *Fuchs. Hist.* 251. *Trag.* 40. Thymus Serpyllum. *Lin. Sp. Pl.* 825. *Eng. Fl.* iii. p. 107. *Eng. Bot.* t. 1514.
French..	Serpolet; Thym sauvage.
Italian ..	Serpillo; Serpollo; Sermollino.
Spanish ..	Serpol; Tomillo sylvestre.
Port......	Serpol; Serpil.
German ..	Quendel.
Dutch....	Quendel; Wilde Thym.
Danish ..	Vild Thymian.
Swedish..	Backtimian.
Polish	Macierzanka.
Russ.	Schadownik.

Description.—The root is perennial, slender, hard, ligneous, and fibrous. The stems are numerous, decumbent, branched, hard, roundish, minutely pubescent, varying from four inches to a foot in height; the branches are opposite, ascending, slender, tetragonal, of a brownish red hue. The leaves are opposite, shortly petiolate, plane, ovate, obovate, or ovate-lanceolate, obtuse, entire, dotted, whitish beneath, the margin more or less ciliated at the base. The flowers are disposed in small capitate spurious whorls, subtended by four bracteæ; each flower on a short pedicel. The calyx is tubular, marked with ten ribs, villous, purplish, two-lipped, the upper lip plane, three-toothed, the lower lip bifid, with subulate, ciliated segments. The corolla is of a pale reddish purple colour, bilabiate; the tube cylindrical, as long as the calyx; the upper lip erect, oblong, nearly plane, notched; the lower lip spreading, trifid, with ovate obtuse segments. The stamens are four, distant, sometimes rather longer than the corolla, with erect subulate filaments inserted in the tube, tipped with small, cordate, purple anthers. The germen is ovate, four-lobed, supporting a subulate style, terminated by a bifid acute stigma. The fruit consists of four minute nuts, situated at the bottom of the persistent calyx, the tube of which is clothed with hairs at the period of maturation. Plate 44, fig. 2; (*a*) calyx, natural size; (*b*) corolla; (*c*) entire flower, magnified.

Wild Thyme, so well known for its pleasant odour, is abundant on heaths, hills, and dry pastures in every part of the kingdom, flowering in July and August.

The generic name is derived from θυμος, *strength*, the plants to which it refers being supposed from their aromatic properties to strengthen the animal spirits. *Serpyllum*, from εϱπυλλον, and that from εϱπω, to *creep*, refers to the procumbent habit of the plant. It is doubtful whether this is the plant intended by Dioscorides. It is probably referred to by Virgil *, both as *Thymus* and *Serpyllum*. Wild Thyme is sometimes called, provincially, *Mother of Thyme*, *Pulial Mountain*, and *Creeping Thyme*.

The common garden Thyme (*T. vulgaris*) is distinguished by its erect habit, ovate revolute leaves, and its whorled spikes of flowers. There are several other species indigenous to southern climates. Wild Thyme is subject to many varieties; when growing on dry exposed downs, it is dwarfish and procumbent, and the heads of flowers are more crowded; when it grows among furze, &c., it is more slender, and runs up to the height of a foot or more: sometimes it is all over hoary or woolly; in one variety the leaves are almost linear, and in another the foliage has the scent of lemon-peel, or of balm. The flowers, moreover, are sometimes larger than ordinary, and of a paler purple colour, or even white.

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* "Nerine Galatea, thymo mihi dulcior Hyblæ."
Ecl. vii. v. 37.

"Allium serpyllumque herbas contundit olentes."
Ecl. ii. v. 11.

——— "olentia latè
"Serpylla et gravitèr spirentis copia thymbræ."
Georg. iv. *v.* 31.

QUALITIES AND GENERAL USES.—The leaves of this plant infused in boiling water, have been proposed as a substitute for *tea*. The foliage is eaten by sheep and goats, but refused by swine. It has been asserted that this and other aromatic herbs impart an agreeable flavour to the flesh of sheep that feed upon them; but it is well known that sheep only crop these plants occasionally, or when there is a deficiency of other pasturage. The truth is, that the situation favourable to aromatic plants produces a short sweet herbage, best adapted for those animals. Bees are extremely fond of the flowers.

The odour of the plant is sweet, fragrant, and agreeable; the taste bitter, camphorous, and aromatic. It yields its virtues both to water and spirit. The aqueous infusion resembles *tea*, and takes a blackish hue, by the addition of sulphate of iron. The distilled water is fragrant, and with it comes over a small portion of essential oil of a reddish colour, powerful odour, and acrid taste. Its other qualities appear to be owing to the presence of extractive matter, and a resin resembling camphor, found in other labiate plants.

MEDICINAL PROPERTIES AND USES.—Wild Thyme has the aromatic, tonic, stomachic, diuretic, and resolutive properties common to many labiate plants; in addition to which it is considered emmenagogue, antispasmodic, and cephalic. Its effects have been extolled in the flatulent and abdominal pains, which so often disturb nervous and melancholic subjects; also in hysteria, nervous headaches, giddiness, &c. Linnæus * speaks of it as well adapted for relieving the headache which follows inebriation. It has also been recommended in leucorrhœa of long standing, chronic diarrhœa, and obstinate catarrhs. "Sir John Hill records the case of a gentleman cured of that troublesome affection, nightmare, by drinking the infusion of Wild Thyme." † What has been said in our former pages of Rosemary, Balm, and others of the same natural family, will apply equally well to this plant.

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* Fl. Suec. n. 535.

† Waller, Brit. Dom. Herb. p. 343.

As a topical application, it is recommended for promoting the resolution of serous swellings, and atonic tumours, applied either in little bags, or by fomentation *. "Ettmuller recommends it in baths for nervous disorders, and for immersing the feet in cases of deranged menstruation, which he says it powerfully assists." † It may also be employed in this form for some chronic diseases of the skin, scrofula, and rachitis.

It is given in powder, to the amount of a drachm or more, suspended in water or wine, or made into an electuary with honey. A more preferable form is the infusion, which may be made like common tea. The vinous infusion is a useful tonic stomachic; it may be combined with the root of Sweet Flag, Tormentil, &c. Several of the continental pharmacopœias order a distilled spirit to be made from the flowering plant: according to Lange ‡, this has been used with success in paralysis of the tongue. The distilled water is seldom used. The volatile oil is sometimes efficacious in assuaging the pain of carious teeth. The dried plant enters into the composition of the herb-tobacco mentioned when speaking of Coltsfoot.—"Employed even in this form, it has been known to produce good effects on the digestive organs, and relieve headache and drowsiness." §

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* Murray, App. Med. tom. ii. p. 157.

† Waller, *l. c.*

‡ In Richter's Bibliothek, vol. viii. p. 508.

§ Waller, *l. c.*

CLXXVI.

LINARIA VULGARIS.

Common Toad-flax.

Class XIV. Didynamia.—*Order* II. Angiospermia.

Nat. Ord. Scrophularineæ.

Gen. Char. *Calyx* five-parted. *Corolla* personate, spurred at the base, the mouth closed by a projecting palate. *Capsule* ventricose, two-celled, opening by valves or teeth.

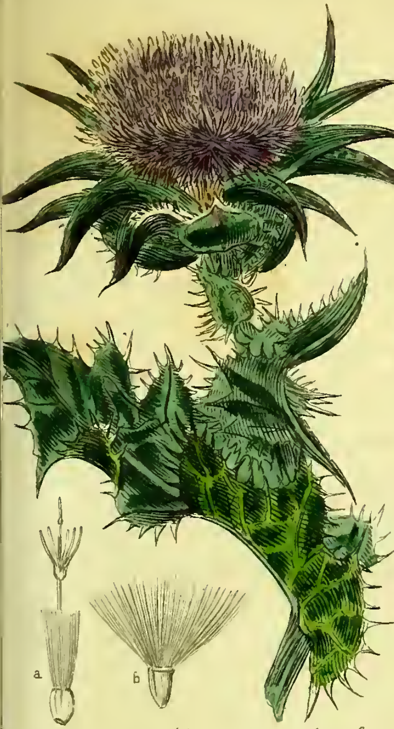
Spec. Char. Stem erect. Leaves linear-lanceolate, scattered, crowded. Racemes terminal. Flowers imbricated. Calyx glabrous, shorter than the spur.

SYNONYMES.

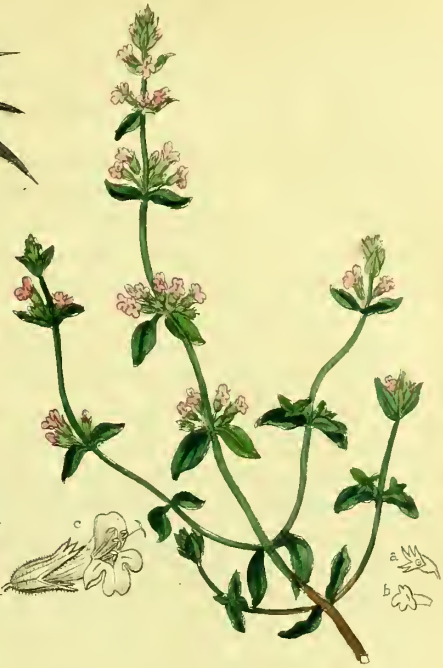
Latin	Linaria vulgaris lutea, flore majore. *Bauh. Pin.* 212. Linaria vulgaris lutea. *Ger. Em.* 550. *Raii Syn.* 281. Linaria vulgaris nostras. *Park. Theatr.* 458. Osyris, sive Linaria. *Fuchs. Hist.* 532. c. 210. Antirrhinum Linaria. *Lin. Sp. Pl.* 858. *Fl.* iii. p. 134. *Eng. Bot.* t. 658. Linaria vulgaris. *Mœnch. Meth.* 528.
French....	Linaire; Linaire commun.
Ital., Span., and Port.	Linaria.
German ..	Flachskraut; Gemein gelbe Flachskraut; Waldflachs; Leinkraut.
Dutch	Vlaskruid; Wild Vlas.
Danish....	Vild torsksmand.
Swedish ..	Fluysblomster.
Polish	Lennek panny maigi.
Russ.	Dikol len.

Description.—The root is perennial, woody, tortuous, creeping, whitish, and fibrous. The stem is erect, cylindrical, gla-

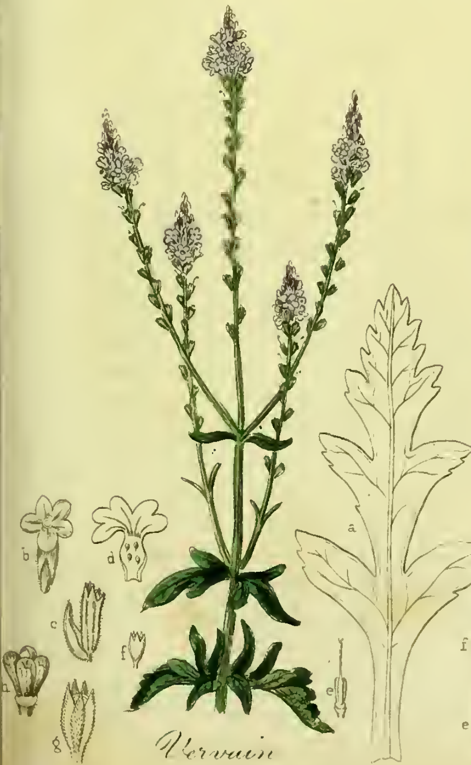
Plate 44



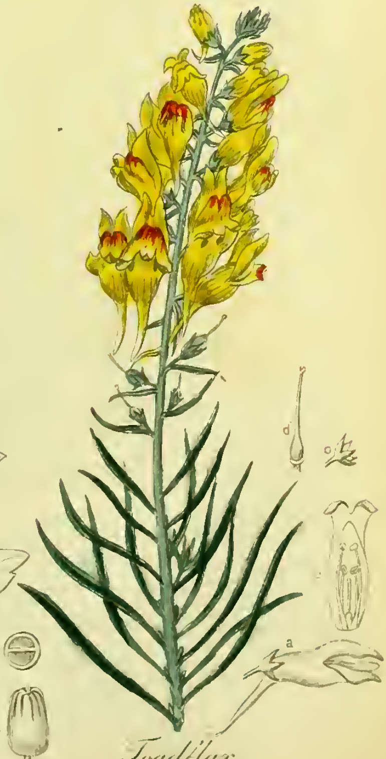
Marian Thistle



Thyme



Vervain



Toadflax

brous, light green, tough, leafy above, simple, or slightly branched towards the summit, and varies from one to three feet in height. The leaves are sessile, erectly spreading, numerous, scattered, crowded towards the summit of the stem, linear-lanceolate, acute, entire, somewhat revolute at the margin, and of a pale glaucous green colour. The flowers are disposed in a terminal erect raceme, in an imbricated manner; each flower supported on a short peduncle, with a linear, acute, reflexed bractea at the base. The calyx is monophyllous, glabrous, five-parted, with ovate oblong, acute, erect segments. The corolla is large, pale yellow, with an ample ventricose tube, terminating at the base in a conical-subulate spur; the limb is bilabiate, ringent, the upper lip erect, bifid, with the segments rounded, reflexed at the margin; the lower lip three-lobed, the side lobes spreading, somewhat concave, the middle lobe much smaller, nearly round; the palate fornicate, prominent, saffron coloured, clothed with silky hairs. The four stamens are furnished with whitish subulate filaments, the two longer attached to the lower lip, clavate and villous at the base; anthers oval, yellow, connivent by their parietes. The germen is ovate, subcompressed, glabrous, with a subulate style as long as the shorter stamens, terminated by a capitate truncated stigma. The fruit is an ovate-oblong, emarginate two-celled capsule opening at the end, subtended by the persistent calyx. The seeds are numerous, orbicular, brownish black. Plate 44, fig. 4; (*a*) entire flower viewed sidewise; (*b*) calyx; (*c*) longitudinal section of the corolla, shewing the stamens and pistil; (*d*) pistil; (*e*) capsule; (*f*) transverse section of the same.

This plant is common on dry banks, the borders of corn fields, and in hedges, flowering from July to September.

The generic name is derived from *Linum*, *flax*, the leaves of the species here described resembling those of flax. In consequence of this similarity, and from a fancied resemblance between the mouth of the flower and that of the toad, it has also received its common name. It is sometimes called, provincially, *Butter and Eggs*.

Some other species of *Linaria*, formerly included in the genus *Antirrhinum*, are natives of Britain, and there are numerous foreign kinds. The three-leaved Toad-flax (*L. triphylla*) is a common border annual. The unexpanded flowers of *L.*

vulgaris, bear some resemblance in figure to little birds perched upon the branches of a tree. A singular variety of this plant, the *Peloria*, with five spurs and five stamens to each flower, is occasionally to be met with. Toad-flax is a troublesome weed in sandy pastures.

The foliage is refused by horses, cows, and swine, and is seldom touched by sheep or goats. According to Dambourney, the fresh herb when in blossom imparts an olive colour to woollen cloth and silk. Linnæus* states that an infusion of the plant in milk is used in Smoland to destroy flies.

Qualities.—The Toad-flax has a faint disagreeable smell, somewhat resembling that of dwarf Elder, when the plant is rubbed between the fingers; to the taste it is bitterish, subsaline, herbaceous, and ungrateful. The aqueous infusion is of a reddish colour, and has a dull bitterish taste; it is not affected by sulphate of iron. We have no account of its chemical properties.

Medicinal Properties and Uses.—Toad-flax is generally allowed by the older writers to be a powerful diuretic, cathartic, and deobstruent; hence it has been employed to carry off the water of dropsies †, to remove obstructions of the liver or mesenteric glands, obstinate hypochondria, and in some affections of the kidneys and bladder. It is never used in regular practice, but is a well known rustic medicine. "Its action is rather rough, and sometimes accompanied with vomiting; if properly managed, however, it may be taken without harm. The country people boil the whole plant in ale, and drink the decoction; some use the expressed juice, which operates more powerfully still, and produces a copious flow of urine." ‡

Toad-flax has, perhaps, enjoyed most reputation as an external remedy, in which character it is said to be anodyne and repellent. It has been principally used to disperse and assuage the pain of hæmorrhoides cæcæ §, or blind piles, in the form either of ointment, cataplasm, or fomentation. The expressed juice is said to be a useful application to foul malignant ulcers, even when cancerous or fistular[*]; for this purpose it is best applied by means of a piece of lint well soaked in it, and several times doubled; or the bruised leaves in the form of cataplasm may be laid on the surface of the ulcer. The juice is also reputed to be efficacious for removing spots and blotches from the face. The distilled water, according to Geoffroy, is useful in inflammation of the eyes. An infusion of the flowers in combination with those of Mullein, used as tea, is stated to be highly useful in cutaneous disorders. Hamnerin[†] adduces a case in which this infusion cured an exanthematous disorder, which for three years had resisted all other measures.

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* Fl. Suec. p. 218.

† Tragus, 357.

‡ Waller, Brit. Dom. Herb. p. 345.

§ Horst. Obs. et Epist. Med. lib. iv. obs. 50. S. Pauli, Quad. Bot. 415. Chesnau, Obs. 360.

For internal use, the decoction appears to be the best form: this may be made with an ounce of the dried, or twice the quantity of the recent plant to a pint and a half of water, boiled down to a pint: to be taken in the dose of a wine-glassful. A vinous decoction is preferred by some. The ointment[‡] is made by beating together the fresh leaves and flowers, with twice the quantity of lard, or by gently boiling the same ingredients. For the purpose of fomentation, the flowering tops may be boiled with Chamomile flowers, or Mullein, in water or milk.

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[*] Geoffroy, Mat. Med. iii. p. 732.

[†] In Provincial-Doctorernes Berättelser, 1761, p. 7.

[‡] The inventor of this ointment was Dr. Wolph, physician to Ludovicus, Landgrave of Hesse, by whom he was frequently urged to disclose the secret, and as often refused, until the prince offered him a fat ox annually for the discovery. Upon which he made the following line to distinguish the Linaria from *Euphorbia Esula;*—

"Esula lactescit, sine lacte Linaria crescit."

To which the hereditary Marshal of Hesse added,

"Esula nil nobis; sed dat Linaria taurum."

Murray App. Med. tom. ii. p. 220. *ab Horst. l. c.*

CLXXVII.

POTENTILLA TORMENTILLA.

Tormentil.

Class XII. Icosandria.—*Order* III. Polygynia.

Nat. Ord. Rosaceæ.

Gen. Char. *Calyx* eight or ten cleft, segments alternately smaller. *Petals* four or five. *Fruit* consisting of numerous minute nuts, placed on a small dry receptacle.

Spec. Char. Calyx eight-cleft. Petals four. Leaves ternate; leaflets elliptical-lanceolate, inciso-serrate. Stem ascending, dichotomous.

SYNONYMES.

Latin......	Tormentilla sylvestris. *Bauh. Pin.* 326.
	Tormentilla. *Ger. Em.* 992. *Raii Syn.* 257.
	Septifolium sive Tormentilla. *Fuchs. Hist.* 260.
	Tormentilla erecta. *Lin. Sp. Pl.* 716.
	Tormentilla officinalis. *Curt. Lond.* t. 337. *Eng. Bot.* t. 863.
	Potentilla Tormentilla. *Sibth.* 162. *Netl. pot.* 65.
French....	Tormentille.
Ital. & Port.	Tormentilla.
Spanish...	Tormentila.
German. ..	Tormentill; Blutwurz; Rurhrwurz; Sieben fingerkraut.
Dutch.....	Tormentille; Zevenblad.
Danish....	Tormentil.
Swedish ..	Blodrot.
Polish.....	Kurze ziele.
Russ..	Sabiasnoi koren.

Description.—The root is perennial, thick, roundish, irregular, knobbed, woody, fibrous, dark brown externally, reddish within. The stems are numerous, ascending, sometimes procumbent, round, slender, wiry, slightly hairy, branched and dichotomous above, varying from eight to sixteen inches in length. The leaves are alternate, amplexicaul, nearly sessile, of three leaflets, (towards the base of five,) which are lanceolate-elliptical, or somewhat rhomboid, deeply serrated, slightly pubescent, bright green above, paler beneath, with two deeply cut stipules at the base. The flowers are axillary and lateral, solitary and erect, on long, filiform, naked peduncles. The calyx is usually eight-cleft, the segments ovate, acute, spreading, alternately smaller; the four outer narrower and accessory. The petals are commonly four, golden yellow, obcordate, emarginate, attached by short claws to the rim of the calyx. The stamens are numerous, (sixteen to twenty,) with yellow capillary filaments inserted into the calyx, not half the length of the petals, tipped with roundish-ovate, compressed, didymous, erect anthers. The germens are several, (about eight,) glabrous, roundish, obtuse, with the style attached laterally, terminated by an obtuse stigma. The fruit consists of several minute nuts or achenia, seated on a small depressed hairy receptacle; they are ovate, obscurely wrinkled, and smooth. Plate 45, fig. 1; (*a*) calyx, natural size; (*b*) stamens; (*c*) pistil.

Tormentil is common on heaths, dry barren pastures, and by road sides, flowering in June and July.

Tormentilla is derived from *tormina*, a *pain* or *griping*, in allusion to the use of the plant in dysentery. It has also been called *Heptaphyllum* and *Septfoil*, from the seven divisions of the lower leaves.

There is some diversity of opinion as to whether the Tormentil should constitute a separate genus, or be united with Potentilla. We have not unfrequently gathered a Tormentilla with five petals and a ten-parted calyx; and the different species of Potentilla may sometimes be found varying with four and five petals. We therefore prefer, with Nestler and others, to consider the Tormentil as a Potentilla, in which one-fifth of the parts of fructification are suppressed. On this principle, the other British species of Tormentil (*Tormentilla reptans*, Linn.) would be a variety of *Potentilla reptans*. We have already described the common creeping Cinquefoil, (*P. reptans*); another species, the Silver-weed, (*P. anserina*,) known by its pinnated leaves, white and silky beneath, is common by road sides; it has in a less degree the astringent properties of Tormentil.

General Uses.—The roots of this plant are highly useful in tanning, and for this purpose are superior to oak-bark. In the Orkneys and the western isles of Scotland they are boiled in water, and the leather is steeped in the cold liquor. Leyser observes that the inspissated red juice of the root may be conveniently substituted as a dye for dragon's blood. The roots also, with the addition of alum and the berries of the Common Guelder Rose, (*Viburnum Opulus*,) will dye leather of a red colour*. Mr. Young informs us, that swine are fed on the roots in Killarney. The foliage is sometimes eaten by cows, goats, sheep, and swine, but is refused by horses.

Qualities.—The root, except in its recent state, when it is faintly aromatic, is inodorous; it has a slightly bitter, and very astringent styptic taste. It yields its active matter both to boiling water and rectified spirit. The aqueous infusion is of a reddish colour, quickly becoming black on the addition of sulphate of iron, and a copious precipitate is formed by solution of isinglass. The extracts are intensely styptic, particularly the spirituous. Tormentil root affords more tannin or tannate of gelatine than any other substance except galls and catechu.

Medicinal Properties and Uses.—The root of this plant has been celebrated from the most remote periods as a powerful astringent; and has consequently been much employed in diarrhœas and hæmorrhages †. Some of the ancients considered it sudorific and alexipharmic, and beneficial in the plague and other malignant diseases. Vesalius ‡ considered it equal to Guaiacum and Sarsaparilla in the cure of syphilis. It has also been highly commended in fevers, small-pox, measles, &c., especially when accompanied with great relaxation. It contains but little resinous matter, and is therefore not of a stimulating or heating nature; it is consequently useful in the diarrhœas attendant upon phthisis, and in diarrhœa cruenta. Dr. Cullen § found it, both by itself or combined with gentian, cure intermittent fevers. It is praised as a tonic and stomachic, in loss of appetite, or a depraved state of the digestive organs. The older physicians considered it to act in a peculiar manner upon the acidities of the stomach and bowels, and to cleanse them from the slimy mucus and sordes with which they were loaded. "There was formerly an extract made of this root, by the ordinary method, which Ettmuller greatly extols in affections of the stomach and bowels, in the dose of half a drachm to a drachm. This root may also be very usefully combined with the stomachic bitters and aromatics, as bistort, wormwood, sweet flag, avens-root, &c.; an excellent remedy will be formed by these combinations for the most obstinate stomach complaints. Infusions of the same kind with good beer, instead of water, will also be found of great service in restoring lost appetite."*

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* "By masticating the root and rubbing in the saliva with their fingers, the Laplanders dye of a red colour the skins which they use as a part of their clothing." *Lin. Fl. Lap. ed.* Smith, p. 180.

† Schroder, 693. Rutty, Mat. Med. 521.

‡ De rad China, p. 84.

§ Mat. Med. vol. ii. p. 36.

Externally it is useful as a gargle in relaxation of the uvula, ulcers of the mouth, and to loose and spongy gums. It may also be employed for consolidating old ulcers†, and as an application to fœtid sores. A strong decoction is a useful application to warts, which should be kept covered with a piece of lint constantly moistened with the liquid. Neither as an external or internal remedy, however, has Tormentil obtained that attention to which it is entitled; and like some other valuable plants it appears to be neglected chiefly because it is common and indigenous.

The powdered root may be given in substance in the dose of half a drachm to a drachm. It is generally administered in the form of decoction, by boiling an ounce of the root in two pints of water till one-fourth is consumed, the dose of which is from two to four drachms. The dose of the extract is from a scruple to half a drachm.

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* Waller, Brit. Dom. Herb. p. 347.

† Murray, App. Med. tom. iii. p. 141.

CLXXVIII.

VALERIANA OFFICINALIS.

Officinal, or Great Wild Valerian.

Class III. Triandria.—*Order* I. Monogynia.

Nat. Ord. Valerianeæ.

Gen. Char. *Calyx* a thickened involute margin at the top of the germen, at length unfolding into a feathery pappus. *Corolla* monopetalous, five-cleft, gibbous at the base. *Fruit* indehiscent, one-seeded, crowned with the feathery pappus.

Spec. Char. Corolla gibbous at the base. Leaves all pinnate; leaflets lanceolate, nearly uniform, serrated.

SYNONYMES.

Latin.	Valeriana sylvestris major. *Bauh. Pin.* 164. *Raii Syn.* 200. *Park. Theatr.* 122. *Dod. Pempt.* 346. Valeriana major sylvestris. *Ger. Em.* 1075. Phu germanicum. *Fuch. Hist.* 857. Valeriana Officinalis. *Lin. Sp. Pl.* 45. *Eng. Fl.* i. p. 43. *Eng. Bot.* t. 698. *Curt. Lond.* 6. t. 3. *Dufr. Val.* p. 46.
French	Valeriane; Valeriane sauvage.
Italian	Valeriana.
Sp. & Port.	Valeriana.
German.	Baldrian; Gemeiner Baldrian.
Dutch.	Valeriane; Wilde Valeriane.
Danish	Baldrian; Valansdrod; Venderod; Œinrod Valerian.
Swedish	Vendelrot.
Polish.	Kozlki; Koztkowy.
Russ.	Balderjan; Maun.

Description.—The root is perennial, composed of long, slender, fleshy, whitish or dusky brown fibres, united into a head and sending out long creeping shoots from the crown.

The stems are straight, erect, fistular, striated, yellowish green, glabrous or slightly hairy, varying from two to four feet in height. The leaves are opposite, petiolate, distant, decreasing in size towards the summit, usually divided into seven or eight pair of lanceolate serrated leaflets, and an odd one, deeply veined, of a dark green colour above, paler beneath, and bearded at the base. The flowers are disposed in terminal corymbs, which at length become paniculate, with lanceolate, connate, waved, pale bracteæ at the base of the peduncles. The limb of the calyx is small and involute during æstivation, but finally expands into a feathery pappus crowning the fruit. The corolla is of a pale flesh colour, funnel-shaped, with a small lateral protuberance at the base; the limb divided into five obtuse, nearly equal segments. The stamens are three, with subulate filaments, longer than the corolla, crowned with roundish-oblong, yellow anthers. The germen is inferior, oblong, supporting a slender style, rather shorter than the filaments, tipped with a trifid bearded stigma. The fruit is smooth, ovate-oblong, purplish, crowned with a feathery pappus of ten or twelve rays, and contains a single oblong seed. Plate 45, fig. 2; (*a*) root; (*b*) longitudinal section of the flower to show the stamens; (*c*) fruit.

This plant is abundant in moist woods and by the sides of rivers and ditches, and is sometimes found on dry elevated heaths and pastures, flowering in June and July.

The generic name is derived either from *Valerius*, who is said to have discovered the virtues of the plant, or more probably from *valere*, to be in good health, in allusion to its medical properties. This species was for some time regarded as the φου of Dioscorides, but Sibthorp has proved that to be a distinct plant, which he has named *Valeriana Dioscoridis*. It is called provincially *Capons-tail*, *Setwall*, and *All-heal*.

This plant is subject to several variations, which are scarcely sufficient to constitute varieties. The stem is usually glabrous, sometimes hirsute; the lower leaves are occasionally almost undivided; the corymbs contracted or loose. A sub-variety is found on elevated pastures, in a calcareous soil, which is seldom more than two feet in height, and has narrower leaves than the common kind, than which it is also more aromatic, and is to be preferred for medicinal use. There are two other indigenous species of Valerian; of these the small Marsh Valerian (*V. dioica*) is by far the most common, and is distinguished by its diœcious flowers, ovate-spatulate radical leaves, and lyrato-pinnatifid cauline ones: it seldom reaches a foot in height.

The leaves of *V. Officinalis* are eaten by cows, but are not relished by sheep. Cats are well known to be delighted with the roots; rats are said to be equally fond of them, and they have hence been used for the purpose of enticing those animals to their destruction.

QUALITIES.—The root[*] has a peculiar, strong, penetrating, to most persons disagreeable odour, and a warm, bitter, sub-acrid and slightly saline taste, compared to that of newly tanned leather, or of Asarabacca root. The saturated watery infusion is of a red colour, and has the odour and taste of the root; it is rendered black by sulphate of iron. The spirituous extract has more of the qualities of the root than the aqueous. Spielmann, Bergius, and Lewis obtained no volatile oil by distillation, but Neumann and others have procured it in small quantity. From Trommsdorff's analysis it appears to be of a very liquid kind, has a greenish-white colour, and in odour and taste much resembles camphor: its specific gravity at 77° Fahr. is 0.9340; when exposed to light it becomes yellow; a small portion of nitric acid converts it into resin, and a larger quantity into oxalic acid. The expressed juice of the root contains starch, a peculiar extractive matter, and gum; while the residue affords a portion of black-coloured resin, but consists chiefly of woody fibre.

MEDICINAL PROPERTIES AND USES.—Valerian root, when ingested, increases the action of the digestive apparatus even so as to produce in a large dose, vomiting, purgation, and the expulsion of intestinal worms. Consecutively it excites perspiration, the secretion of urine, and the menstrual efflux; but it is especially remarkable for its action on the nervous system, and for its powerfully antispasmodic and slightly anodyne effects. It appears to have been given with most success in epilepsy, for which Fabius Columna[†] first recommended it, having experienced its beneficial effects in his own person. Subsequently it has attracted the attention of numerous observers, as Cruger[‡],

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[*] Valerian root is cultivated in some parts of England for the market, but that which grows wild in dry calcareous soil is the best. It should be dug up early in the spring, or in autumn before the leaves wither, and dried in a warm well ventilated room. It should be kept in closely stopped bottles till required for use. One of the best tests of its goodness is the effects it produces upon cats; they will generally roll on it with extatic delight, and gnaw it to pieces.

[†] Phytobusanos. *Neapol.* 1592. p. 97.

[‡] Eph. Nat. Cur. Dec. 2. A. 4 & 7.

Lentilius *, Schuchmann *, Riverius †, Sauvages ‡, Scopoli §, Marchant ||, Chomel and Tissot, with whom it has proved successful both in children and adults. It is not a little remarkable that Valerian has been very efficacious in epilepsy produced by anger, fear, &c. It is however to be expected that in some instances it should afford no benefit, as related by Rocher and Alibert. It has been moreover exhibited in those neurosæ distinguished by increased mobility and irritability, particularly in hysteria ¶ and chorea, vertigo, hemicrania**, &c. In cases of partial paralysis, incontinence of urine, painter's colic, weakness of sight ††, and even in amaurosis, it has produced good effects. Lastly, in putrid and intermittent fevers it has proved highly useful, and is an excellent adjunct to cinchona bark ‡‡. Dr. Thomson, who adds his testimony on this point, likewise observes, that he has found it exceedingly serviceable in hypochondriasis. Its property of expelling worms has been already adverted to. Dr. Withering remarks that it is an excellent medicine in cases of habitual costiveness, having afforded relief when stronger purgatives were ineffectual. Bergius §§, however, who allows it to be diuretic, diaphoretic and anthelmintic, states that he had never observed it to be emetic or laxative.

Externally, the volatile oil has been used as a liniment to paralysed limbs. The powdered root mixed with snuff and used as an errhine, is stated to have proved serviceable in weakness of sight. It has been in high repute with the peasantry as a remedy for wounds, cuts, &c. ||||

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* Eph. Nat. Cur. Dec. 2. A. 4 & 7.

† Prax. Med. L. i. p. 62.

‡ Nosol. Method. tom. iii. part 2.

§ Fl. Carn. p. 347.

|| Mem. de l'Acad. des Sc. de Paris, 1706, p. 333.

¶ Hall. Hist. St. Helv. n. 210.

** Fordyce de Hemicrania, p. 417.

†† "The veterinary practitioners on the continent make great use of it for preserving and restoring the sight of horses." *Waller*, l. c.

‡‡ See Murray's App. Med. tom. i. p. 284.

§§ Mat. Med. tom. i. p. 31.

|||| Gerard (Herb. em. 1078) says "it is put into counterpoysons and medicines preseruatiue against pestilence ; whereupon it hath been held (and is to this day among the poore people of our northerne parts) in such veneration amongst them, that no broths, pottage, or physicall meats are worth

Valerian root is given in powder to the extent of half a drachm or a drachm, in any convenient vehicle, three or four times a day, and there is no danger of its producing bad effects; a small quantity of mace corrects its disagreeable flavour. The volatile oil may be given in the dose of four or five drops upon sugar.

INFUSION OF VALERIAN*.

Take of Valerian root (coarsely powdered)	half an ounce.
Boiling water	one pint.

Macerate for half an hour in a lightly covered vessel and strain.

This is a useful form in hysterical and nervous cases when the stomach will not bear the powder. Dose, half an ounce to two ounces twice or thrice a day.

TINCTURE OF VALERIAN*.

Take of Valerain root bruised	five ounces.
Proof spirit	two pints.

Macerate for fourteen days and strain.

Dose, one drachm. It is chiefly used as an adjunct to the infusion, or to other antispasmodic remedies.

COMPOUND TINCTURE OF VALERIAN*.

Take of Valerian root bruised	five ounces.
Aromatic spirit of ammonia	two pints.

Macerate for fourteen days and strain.

Dose, half a drachm to a drachm in milk or gruel.

The continental pharmacopæias contain various other formulæ; such as an aqueous and spirituous extract, the former of which is nearly inert; a vinous infusion, and an ethereal tincture, which appear to be useful preparations.

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any thing, if *Setwall* were not at an end; whereupon some woman poet or other hath made these verses,

"They that will haue their heale,
Must put Setwall in their keale."

* Pharm. Lond. 1836.

CLXXIX.

VERBENA OFFICINALIS.

Common Vervain.

Class XIV. Didynamia.—*Order* II. Angiospermia.

Nat. Ord. Verbenaceæ.

Gen. Char. *Calyx* tubular, with five teeth, one of them generally shorter than the rest. *Corolla* with an incurved tube and a nearly equal five-cleft limb. *Stamens* included, four or two. *Seeds* two or four, inclosed in a thin evanescent pericarp.

Spec. Char. Stem erect, somewhat hispid. Leaves lanceolate, pinnatifid, with cut segments. Spikes filiform, somewhat panicled.

SYNONYMES.

Greek........	ιερα βοτανη; περιστερεωνα.
Latin....	Verbena communis flore cœruleo. *Bauh. Pin.* 269. Verbena communis. *Ger. Em.* 718. Verbena vulgaris. *Raii Syn.* 236. *Park. Theatr.* 675. Verbenaca recta. *Dod. Pempt.* 150. Verbenaca supina, sive fœmina. *Fuchs. Hist.* 566. Verbena officinalis. *Lin. Sp. Pl.* 29. *Eng. Fl.* iii. 71. *Eng. Bot.* t. 767.
French. ..	Verveine; Verveine commune; Herbe sacrée.
Ital. Span. and Port.	Verbena.
German ..	Eisenkraut.
Dutch....	Yzerkruid; Yzerhard.
Danish. ..	Jernurt.
Swedish ..	Jœrnoert.
Polish....	Zeleznik.
Russ.	Schelesnik.
Chinese...	Ma-pien-tsao.

Description.—The root is perennial, (sometimes biennial,) tapering, fibrous, and of a yellowish colour. The stems are upright, tapering, purplish, obsoletely tetragonal, hard, rough at the angles with short prickly hairs, simple, or dividing into opposite slender branches, and attain the height of a foot or eighteen inches. The leaves are opposite, shortly petiolate, ovate-oblong, or lanceolate, pinnatifid, of a dull green colour, rough with short scattered hairs; the uppermost sometimes trifid or simple; the segments incised obtuse, the terminal one the largest. The flowers are small, sessile, with a short acute bractea at the base of each, and are disposed in filiform somewhat paniculate spikes. The calyx is tubular, angular, pubescent, permanent, with five teeth, one of them truncate and shorter than the rest. The corolla is funnel-shaped, with an incurved tube, and a spreading limb divided into five short, rather unequal rounded lobes of a pale or whitish violet colour. The stamens are four, didynamous, included, with very short filaments tipped with roundish anthers. The germen is small, quadrangular, supporting a filiform style terminated by an obtuse stigma. The fruit consists of four oblong concrete nuts, brownish, convex, and reticulated in front, white and nearly plane at the back, inclosed at first in a thin membrane, which fades at the maturity of the seed. Plate 44, fig. 3, (*a*) lower leaf; (*b*) entire flower; (*c*) calyx and bractea; (*d*) corolla opened to show the stamens; (*e*) pistil; (*f*) fruit, natural size; (*g*) the same, magnified; (*h*) nuts.

Vervain is not uncommon in England by road sides and in waste ground, but it was probably introduced at some remote period, as it is seldom found at any great distance from houses and villages. It is rare in Scotland, and has not been found in Ireland. It flowers in July and August.

The name Verbena is said by Theis to be derived from the Celtic *ferfaen.* Some have fancifully considered it a corruption of *Veneris vena;* and others of *herbena,* this term being applied by the Romans to several plants, as Laurel, Olive, Myrtle, &c., used to adorn the altars. Hence Virgil,

> " Verbenasque adole pingues et mascula thura."—*Ecl.* viii. v. 65.

and Terence in Andria,

> " Ex arâ hac sume Verbenas tibi."

In Virgil's 4th Georgic, however, Verbena is used to signify a distinct plant.

The description given by Dioscorides of his ιερα βοτανη agrees tolerably well with this plant. Provincial names of the *Vervain* are, as Gerard informs us, *Holy herb, Juno's tears, Mercury's moist blood, Pigeon's grass,* and *Columbine.*

Vervain was not only employed as above mentioned to adorn the altars for sacrifice, but was worn as a chaplet by heralds who were commissioned to announce peace or war, and it is said to have been used in the league between Tullus Hostilius, the third king of Rome, and the Albans. It was also used by magicians in their enchantments, and by the Druids in their sacred rites, and was gathered by them with nearly as much superstitious reverence as the misseltoe. It likewise formed a celebrated ingredient in love philtres, and was dedicated to Isis, the goddess of birth.

The foliage of this plant is eaten by sheep, and the flowers are visited by bees.

QUALITIES.—Vervain is inodorous, and has a slightly bitter and astringent taste, which it yields to water by infusion. The infusion, which is of the colour of tea, is rendered at first greenish and then black by sulphate of iron, throwing down by degrees a slight precipitate.

MEDICINAL PROPERTIES AND USES.—Few plants have enjoyed greater reputation among the ancients than the Vervain, and have so completely lost it in modern times. It is probable that the medicinal use of the plant originated in its employment for sacrificial and cabalistic purposes. We will merely enumerate a few of the diseases in which it has been extolled;—jaundice, dysentery, gout, ague, calculus, inveterate coughs, diseases of the throat, ulcers, ophthalmia, wounds. It was frequently worn suspended round the neck as an amulet, and Forestus[*] relates a remarkable instance in which the bruised root worn in this manner cured a most inveterate headache. Ettmuller[†] and other more recent authors recommend a cataplasm of the bruised plant to be applied to the head; and in this way, with the internal use of the distilled water, Hartmann[‡] and De

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[*] Opera Om. lib. ix. obs. 52.

[†] Colleg. Pharm. in Schrod. Op. t. i. p. 713.

[‡] Prax. Chym. tom. i.

Haen[*] relate that they had cured several cases of severe headache. A few years since, a Mr. Morley wrote a pamphlet to recommend its use in scrofulous affections. He directs the root to be tied with a yard of white satin ribbon round the neck, where it is to remain till the patient recovers. He also had recourse to infusions and ointments prepared from the leaves.

Rejecting all the fabulous assertions respecting this plant, we can only admit that the expressed juice and the extract may be, to a certain extent, febrifuge, as stated by Tournefort[†] and Chomel[‡]; the infusion may also be serviceable as a collyrium to weak and inflamed eyes, as a gargle in sore throat, and possibly as an astringent lotion to slight ulcers and tumours, but we have many preferable remedies. A strong decoction or infusion made into a syrup is commended in obstinate coughs, and will certainly do no harm.

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[*] Rat. Med. P. 6. p. 292.

[†] Pl. de Paris, t. ii. p. 120.

[‡] Pl. Usuelles, t. 2. p. 86.

CLXXX.

VIOLA ODORATA.

Sweet Violet.

Class V. Pentandria.—*Order* I. Monogynia.

Nat. Ord. Violarieæ.

Gen. Char. *Calyx* of five unequal sepals, extended at the base. *Petals* five, unequal, the under one spurred at the base. *Anthers* connate, two of them spurred behind. *Capsule* of one cell and three valves.

Spec. Char. Leaves cordate, nearly glabrous. Sepals obtuse. Lateral petals with a hairy line. Scions creeping.

SYNONYMES.

Greek.	ἴον πορφυροῦν.
Latin	Viola martia flore simplici odôra. *Bauh. Pin.* 199. Viola nigra sive purpurea. *Ger. Em.* 850. *Dod. Pempt.* 156. Viola martia purpurea. *Raii Syn.* 364. Viola martia simplex. *Park. Parad.* 282. Viola odorata. *Lin. Sp. Pl.* 1324. *Eng. Fl.* i. p. 301. *Eng. Bot.* 619.
French. . . .	Violette ; Violette odorante ; Violette de Mars.
Italian. . . .	Viola ; Violetta ; Viola marzia ; Viola mammola.
Spanish. . .	Violeta ; Violeta olorosa.
Portuguese.	Violetta.
German . .	Veilchen ; Märzveilchen.
Dutch	Tamme Viool ; Tamme blaauwe Violen.
Danish. . . .	Martsfioler.
Swedish . . .	Aetka fioler.
Polish	Fiolki.
Russ.	Pachutschaja fialko.
Armenian .	Manischar.
Chinese. . .	Kiet-tuong-hoa.

Description.—The root is perennial, woody, creeping, of a yellowish white colour, with numerous filiform descending fibres, and sending out from the crown slender, creeping, and rooting scions. The leaves are all radical, on long, smooth footstalks, roundish-cordate, crenate, nearly glabrous, dark green above, paler beneath, and pubescent on the nerves; with radical, membranous, lanceolate, serrate stipulæ. There is no proper stem, but the flowers are solitary and pendant on a scape or peduncle, which is filiform, nearly quadrangular below, longer than the leaves, and furnished with two small lanceolate opposite bracteæ situated above the middle. The calyx consists of five ovate-oblong, obtuse, glabrous, persistent sepals, protuberant at the base, and of a purplish hue. The corolla of a deep purplish blue colour or white, is composed of five unequal obovate rounded petals*, of which the two lateral are marked with a hairy line towards the base, the lower one slightly keeled, and produced at the base into a conical, obtuse, incurved spur. The stamens are inserted on a five-toothed torus, with short filaments, supporting connivent, two-celled anthers, terminated by an ovate membrane of an orange colour; the two superior filaments are produced beyond the anthers into subulate, compressed, greenish appendages, which intrude within the spur. The germen is superior, conical, supporting a clavate twisted style, terminated by a hooked stigma. The fruit is a turgid obtuse capsule, three-angled, with one cell and three valves, which contract elastically and eject the seeds. The seeds are numerous, turbinate, glabrous, whitish. Plate 46, fig. 2, (*a*) anthers; (*b*) pistil; (*c*) fruit; (*d*) capsule, opened to show the seeds.

The Sweet Violet, so universally admired for its odour and beauty, is a well known inhabitant of our woods, pastures, and hedge-banks, flowering in March and April.

Various have been the etymologies proposed for the word Viola. The most probable is from the Greek ιον, so called from its being the fabled food of Io, a favourite of Jupiter. The ιον† of Dioscorides is doubtless our Sweet Violet.

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* The later flowers are often destitute of petals, but produce perfect seed. The white-flowered kind is by some reckoned a distinct species, as the lateral petals are often destitute of the hairy line observed in the purple kind.

† "Viola (ιον) folium habet hederaceo minus, tenuius atque nigrius alioqui haud ita dissimile. Cauliculus a radice medius prodit, in quo flosculus perquam suaviter olens, purpureus. Locis nascitur opacis et asperis." *Lib.* iv. c. 122.

We can scarcely trust ourselves to enter upon the praises of the Violet,—the most *recherchée* of flowers, the beloved of poets:—

"Long as there are Violets,
They will have a place in story."

The ancient poets frequently mention the Violet. The White Violet was the emblem of a hapless lover:—

"Pallentes violas et summa papavera carpens."
Virg. Ecl. ii. v.

"Nec tinctus viola pallor amantium."
Hor. Carm. l. 3. Od. x.

Pliny speaks of three kinds of Violets, purple, yellow, and white. The Violet is always considered an image of modesty, and by some of our old English poets is spoken of as an emblem of faithfulness, as by the author of a sonnet published in 1584:—

"Violet is for faithfulnesse,
Which in me shall abide,
Hoping, likewise, that from your heart
You will not let it slide."

The beautiful allusions of Shakspeare have never been surpassed,—

———— "Violets dim,
But sweeter than the lids of Juno's eyes,
Or Cytherea's breath."
Winter's Tale.

——— "like the sweet south
That breathes upon a bank of violets,
Stealing and giving odour."
Twelfth Night.

The indigenous kinds of Violet amount to eight, including the one before us. The Dog Violet (*V. canina*) by some confounded with this species, is at once known by its want of odour, by possessing an evident stem, cordate acute leaves, acuminate sepals, long toothed stipulæ, and subulate bracteæ. The Hairy Violet (*V. hirta*) most resembles it, but may be known by the short not creeping scions, by the greater hairiness of the plant, and by the situation of the bracteæ below the middle of the scape; also by its paler, scentless flowers. The Pansy Violet, or Heart's Ease, (*V. tricolor*,) is another very common species.

The plant is cultivated in England for the sake of its petals, particularly at Stratford-upon-Avon.

Qualities.—The odour of the petals is remarkably fragrant and agreeable, but is lost in drying; to the taste they are very slightly bitter and mucilaginous; when chewed tinging the saliva blue. The leaves and root are mucilaginous, and rather nauseous to the taste. The petals yield their colour and flavour to boiling water. The purple they impart to syrup is a delicate test for acids and alkalies, changing the former to a red and the latter to a green colour.

M. Boullay has discovered in the root, leaves, flowers, and seeds of this plant, an alkaline principle, not unlike the emetine of Ipecacuanha, and which he proposes to name *Emetine of the Violet*, or *Violine*. It is found combined with malic acid, and is sufficiently active to be poisonous.

MEDICINAL PROPERTIES AND USES.—The odorous principle of the Violet, like that of the lily and the rose, by the production of mephitic gas, is capable of inducing poisonous effects; and Triller[*] mentions a case in which it proved fatal. It is, however, by virtue of this property that the recent flowers derive part of their efficacy; thus Dioscorides[†] recommends them in the epilepsy of children, and Baglivi[‡] in nervous and convulsive diseases, and they are used in the present day for their slightly anodyne effects in inflammatory diseases of the chest and of the mucous membranes, and in some exanthemata. Whether recent or dried they are slightly bitter and mucilaginous; hence their purgative quality mentioned by various authors, and which Pechlin[§] ascribes to them when eaten as a salad; Mesue[||] to the juice; Poterius[¶] to a drachm of them in powder. The syrup of the flowers is recommended as a suitable laxative for children, and when properly prepared as gently anodyne, and pectoral, by no means a useless medicine in irritating coughs and in heat and difficulty of urine.

The herb is emollient, and consequently useful in cataplasms, clysters, and fomentations, as a substitute for Marsh Mallow, &c.

The seeds in emulsion, are accounted diuretic, and have been in some repute for expelling gravel and urinary calculi. They are praised by Scholzius[**], Ray[††], Lauremberg[‡‡], and others, but are not used in the present day.

The root is similar in its properties to Ipecacuanha, and has been long known as a purgative. Bergius[*] found that the aqueous infusion of the recent root proved first emetic and then purgative; but the dried root was merely purgative. Coste and Willemet[†], after various experiments, found that from two scruples to a drachm of the powdered root occasioned vomiting and several alvine dejections. As the powder in substance was nauseous, they made a decoction with two drachms of the root boiled in six ounces of water until one-third was consumed, which, with the addition of a little syrup, had a modified effect, and was given with success as an evacuant in some cases of dysentery. The active principle, *Violine*, may be extracted from the root, in the same manner as *Emetine* from Ipecacuanha[‡].

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[*] Diss. de morte subita ex nimio violarum odore. *Vitembergæ*, 1762.

[†] Mat. Med. *l. c.*

[‡] Opera, p. 114.

[§] De purgantibus, &c., p. 51.

[||] Simpl. i. c. 11.

[¶] Tourn. Hist. des Pl. de Paris, t. i. p. 291.

[**] In Epist. 192. p. 310.

[††] Needham in Raii Hist. Pl. t. i. 1050.

[‡‡] Diss. epist. ad Hoicrum de calculo, p. 31.

SYRUP OF VIOLET.

Take of fresh petals of Violet ...... one pound.
Boiling water .... two pints.

Macerate for twenty-four hours in a covered glass vessel, pour off the fluid, then strain through fine linen, and with twice the weight of refined sugar make a syrup, without boiling.

The dose is from one to two drachms. Half a drachm, with the addition of a little almond oil, is a useful laxative for children. Acidulated with a small quantity of lemon juice, it may also be given in coughs and sore throat[§].

A conserve[||] made with one part of the flowers and two of refined sugar, has a grateful flavour, and may be used in flavouring nauseous or insipid drinks for the sick.

We may here observe that the Heart's Ease (*V. tricolor*) appears to be deserving of some attention. It was highly praised by the ancients in cutaneous diseases, and it is remarkable that the bruised plant, especially the root, has an odour approaching to that of peach kernels or prussic acid. It has the purgative and sub-emetic properties of the Sweet Violet. Murray considers the Dog Violet (*V. canina*) entitled to the character of a mild evacuant.

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[*] Linn. Diss. de Ipecac. 1774.

[†] Essais bot. sur quelques plantes indigènes, p. 6.

[‡] See Magendie's Formulary by Gregory, p. 46.

[§] The syrup as sold in shops is frequently adulterated, and injured by long keeping.

[||] It is said that the *sherbet* most esteemed by the Turks, and which is drunk by the Grand Signior himself, is made of violets and sugar.

CLXXXI.

JUGLANS REGIA.

Common Walnut.

Class XXI. Monœcia.—*Order* VII. Polyandria.

Nat. Ord. Juglandeæ.

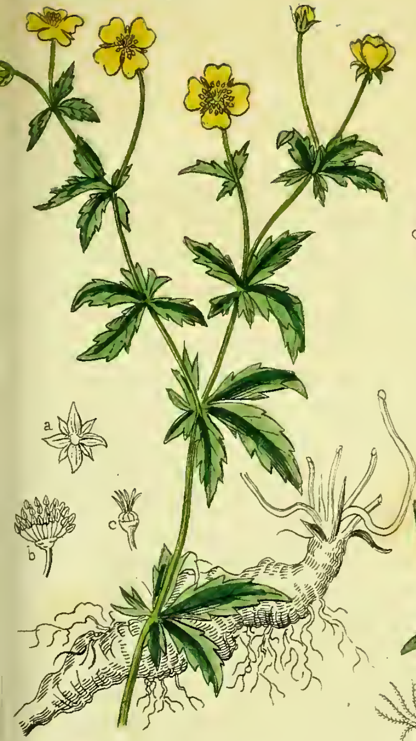
Gen. Char. Male flowers in an imbricated catkin:—*Perianth* six-parted, with a bractea at the base. *Filaments* four to eighteen. Female flowers:—*Calyx* quadrifid, superior. *Corolla* quadrifid. *Styles* two. *Drupe* coriaceous, with a furrowed nut.

Spec. Char. Leaflets about nine, ovate, smooth, nearly equal. Fruit globose.

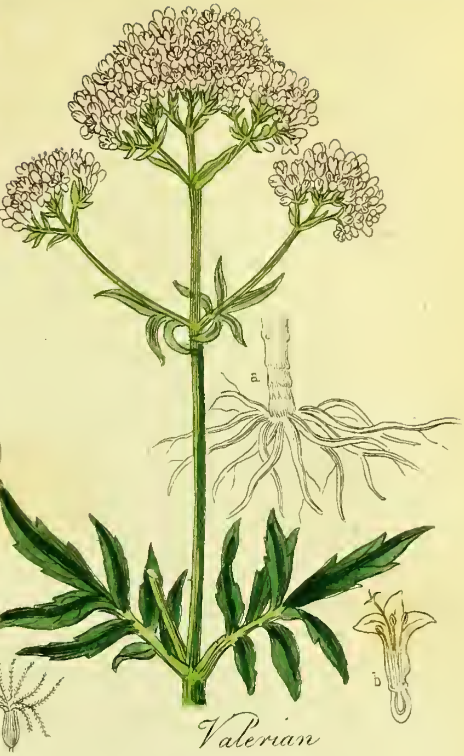
SYNONYMES.

Greek . . .	ϰαϱυον βασιλιϰον.
Latin	Nux juglans seu regia vulgaris. *Bauh. Pin.* 418. Nux juglans. *Raii Hist.* ii. 1376; *Syn.* 438. *Ger. Em.* 1440. *Dod. Pempt.* 804. *Trag.* 1092. Nux juglans vulgaris. *Park. Theatr.* 1413. Juglans regia. *Lin. Sp. Pl.* 1415. *Scop. Carn.* ii. n. 1186. *Lam. Ill.* 781.
French . .	Noyer.
Italian . . .	Noce.
Spanish . .	Noguera; Nogal; Nuez.
Port.	Nogueira.
German . .	Nuszbaum; Wallnuss.
Dutch	Ockernootenbaum.
Danish . . .	Noeddtrœ; Valnodd.
Swedish . .	Walnoettrœd.
Polish . . .	Orzeszina włoska.
Russ.	Greziak orechi.
Persian . .	Girdigan; Charmughz.
Arabic . . .	Akirut; Jowz.
Chinese . .	Ho-tao.

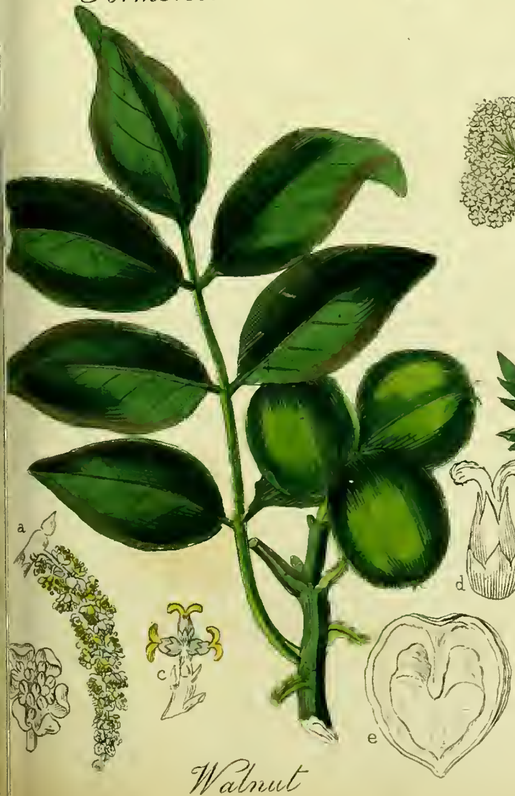
Description.—The Walnut is a large and handsome tree, sending off many spreading branches covered with a greyish bark,



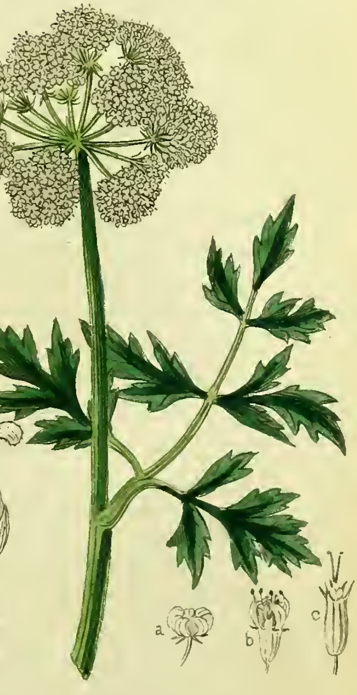
Tormentil



Valerian



Walnut



Water-Dropwort

which is smooth when young, thick and cracked when old. The leaves are large, alternate, petiolate, winged, consisting of seven or nine, sometimes of five leaflets, which are ovate or ovate-oblong, glabrous, acute, nerved, veined, entire, rarely serrated, of a bright green colour. The male flowers are disposed in long, cylindrical, pendent spikes, of a brownish green colour, each flower with a rhombic bractea inserted into the lower surface near the end; the calyx is seven-parted, with roundish segments; the stamens are about eighteen or twenty, with very short filaments supporting erect, oblong, two-celled anthers. The female flowers are two or three together, nearly sessile, situated near the extremity of the boughs; the calyx is an obsolete margin crowning the germen, mostly of four erect, evanescent, short segments; the corolla is four-parted, with ensiform, fleshy, green petals. The germen is oval, supporting a bipartite style, terminated by large, reflexed, indented, lacerated stigmas. The fruit is a large globose-oval drupe, exhibiting under a smooth, light-green, thick, fleshy covering or sarcocarp, an oval-roundish nut, reticulated with furrows externally, inclosing a white, four-lobed, irregularly sinuated nucleus. Plate 45, fig. 3, (*a*) spike of male flowers; (*b*) flower, isolated; (*c*) group of female flowers; (*d*) female flower, magnified; (*e*) longitudinal section of the fruit.

The Walnut-tree is generally considered a native of Persia; it is not indigenous to Europe, but may be considered naturalized in Britain. The flowers appear in April and May, and the fruit ripens about the end of September.

It has been imagined that the tree called by Theophrastus *καϱυον* is our Walnut, but his description is too vague and incomplete to enable us to pronounce with certainty. It was named *καϱυον βασιλικον*, *nux regia*, and *Juglans*, from *Jovis glans*, the nut of Jupiter, by way of pre-eminence. Walnut is probably derived from the German *Walschnuss*, signifying *foreign nut*.

The foreign species are for the most part natives of North America, and their fruit in general is eatable.

General Uses.—The Walnut is valuable both as a fruit and timber tree. Before the introduction of mahogany the wood was much employed in the manufacture of household furniture, but it is now chiefly used in this country for gun-stocks, being lighter in proportion to its strength and elasticity than any other. On the continent the wood is frequently used in cabinet work, as it is beautifully veined and admits of a fine polish. The rind of the fruit, in its green state, is a common article for pickling, and as an adulteration of soy sauce. The kernel of the ripe fruit * is well known at the dessert; it also affords, by expression, an oil resembling that of almonds, useful to painters; and the marc left after expression is a nutritive food for animals. The unripe fruit is used on the continent as an ingredient in various dishes, and is made into a confection with sugar and aromatics. Moreover, the root, leaves, and rind of the fruit afford a yellowish colour in dyeing, and the infusion of the leaves is useful for destroying worms and various insects. The trunk, by incisions made in the spring, yields a saccharine and mucilaginous sap, which, by fermentation, constitutes a pleasant wine, and on evaporation affords a sugar equal to that from beet-root, and which will crystallize, it is said, as well as that from the cane.

QUALITIES.—The rind or exterior fleshy covering of the recent unripe fruit has an acid, bitterish, and then styptic taste; it tinges the saliva green, and when bruised between the fingers imparts to the cuticle a deep blackish colour. The aqueous infusion is acid, bitter, styptic, and unpleasant, becoming of a brownish black colour by the addition of sulphate of iron; and precipitating with solution of isinglass; hence it appears to contain much tannin and gallic acid. The extract prepared from it is greenish-black, shining, of rather a pleasant odour, and an acidulous, rough, styptic taste. The yellowish pellicle or skin of the kernel is also astringent and styptic, but the kernel itself has a sweetish agreeable taste, and beaten up with water forms an emulsion; it contains a portion of amylaceous fœcula, and about half its weight of a sweet, yellowish oil, which does not congeal with cold, and is of a drying nature.

The emanations of this tree are injurious to some plants, and have been known to cause headache in persons who have been long exposed to its influence; but the popular opinion that it is capable of producing stupor and fever needs to be confirmed.

MEDICINAL PROPERTIES AND USES.—The fleshy covering or rind of the fruit is manifestly endued with tonic and astringent properties. The excitation it produces upon the stomach is sometimes sufficient to produce vomiting, as observed by Ray †, Schroeder ‡, and Büchner §. In general it acts upon the in-

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* Walnuts are generally beaten down by means of long poles, and although this practice is injurious to the trees, it is by some considered indispensable, and the notion is prevalent among the peasantry that it renders the tree more productive the next year; Ray quotes two lines on this subject:—

"Nux, asinus, mulier simili sunt lege ligatâ:
Hæc tria nil fructus faciunt si verbera cessant."

† Hist. Pl. p. 246.

‡ Thes. Pharm. p. 608.

§ Diss. de nuce Juglande, p. 24.

testinal canal, promoting its contractions, and thus expelling worms. It was renowned in ancient times as an anthelmintic, and its powers in this respect have been confirmed by Plater[*], Fischer[†], and others. Externally it is resolutive and detersive. The expressed juice diluted, or the decoction, has been used as a gargle in relaxation of the uvula, inflammation of the tonsils or palate, ulcers in the mouth and throat, and to swollen gums. In powder it has also been recommended to sprinkle over atonic and sordid ulcers. The juice mixed with honey is a good application to aphthous ulcers, and forms with vinegar a useful gargle.

The inner bark is reputed to be strongly cathartic and emetic, but its properties have not been sufficiently investigated. The thin epidermis of the kernel is styptic like the rind, and has analogous though less powerful effects[‡].

The kernel deprived of its epidermis is nutritive, and by virtue of the oil and mucilage it contains, may be considered relaxing, demulcent, and lubricating. Taken in large quantities, it was observed by Hippocrates to expel worms. It has these properties, however, only in its recent state, as with age it becomes rancid.

The expressed oil has more decidedly the properties of the kernel from which it is obtained, like that it becomes rancid with age, and irritating in its effects. In large doses, it is certainly anthelmintic[§]. The external application of it is said to be useful in leprous and other cutaneous affections; it is ordered to be rubbed on the affected parts twice or thrice a day.

The rind of the fruit may be given in decoction, but as it is rather uncertain in its effects, the extract appears the best form.

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[*] Prax. Med. t. 3. L. 2. p. 13.

[†] Comm. de verm. *Stadæ*, 1751, p. 14.

[‡] "The roots of the Walnut-tree, laid bare and perforated, in the month of February, yield a copious juice, concerning which Ettmuller says, the properties are truly wonderful; it relieves chronic pains of the teeth, and even cures the pain of gout, and affords an almost miraculous relief to those arising from stone and gravel, both externally applied and internally drank: in the latter case, it carries off the cause of the disease by urine. Many persons keep this liquor as a secret remedy for many chronic diseases." *Waller.* l. c. p. 354.

[§] See Murray, App. Med. tom. i. p. 92.

EXTRACT OF GREEN WALNUTS *.

Take of green rind of Walnuts ...... any quantity.

Bruise it in a stone mortar, adding a little water; express the juice and evaporate in a water-bath, stirring towards the end of the operation with a wooden spatula.

This is considered tonic, antiscorbutic, and anthelmintic.—Dose, half a scruple to half a drachm. With sugar and alcohol it forms a ratifia, reputed to be stomachic.

The kernel, triturated with thrice its weight of water, forms an emulsion, which may be given *ad libitum* in diseases of irritation. The oil, as a remedy for worms, may be given in as large doses as the stomach can bear.

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* Pharmacopœia Austriaca, *Erfurt*, 1821.

CLXXXII.

NASTURTIUM OFFICINALE.

Water-Cress.

Class XIV. Tetradynamia.—*Order* II. Siliquosa.

Nat. Ord. Cruciferæ.

Gen. Char. *Calyx* patent, equal. *Pod* nearly cylindrical; *valves* concave, neither nerved nor keeled. *Cotyledons* accumbent.

Spec. Char. Leaves pinnate; leaflets ovate, sub-cordate, repand, toothed.

SYNONYMES.

Greek . . .	*Σισυμβριον ετερον η καρδαμινη. Dioscorides.*
Latin	Nasturtium aquaticum supinum. *Bauh. Pin.* 104.
	Nasturtium aquaticum. *Ger. Em.* 257. *Park. Theatr.* 1239. *Dod. Pempt.* 592.
	Sisymbrium Cardamine, sive Nasturtium aquaticum. *Raii Syn.* 300.
	Sisymbrium nasturtium. *Lin. Sp. Pl.* 916. *Eng. Fl.* iii. p. 192. *Eng. Bot.* t. 855.
	Cardaminum Nasturtium. *Mœnch. Meth.* 262.
	Nasturtium officinale. *Brown H. Kew. ed. II.* v. iv. p. 110.
French. . .	Cresson; Cresson de fontaine.
Italian . . .	Crescione; Nasturzio; Agretto.
Spanish . .	Berro.
Port.	Agriâo.
German . .	Brunnenkresse; Wasserkresse.
Dutch. . . .	Waterkers.
Danish . . .	Wandkarse.
Swedish . .	Kiœllkrasse.
Polish . . .	Rzezucha.
Russ.	Wodanoia kress.

Description.—The root is biennial or perennial, long, creeping, branched, and furnished with numerous tufts of long, white slender fibres. The stems are thick, fistular, glabrous, cylindrical, branched, rooting, and attain the height of eight or twelve inches or more. The leaves are alternate, pinnate, consisting of two or three pair of distant leaflets, and an odd one; the lower ones large, ovate, and somewhat cordate, the terminal leaflet larger and rounder than the rest; the cauline ones subovate; they are all glabrous, rather succulent, and more or less lobed and toothed. The flowers are disposed in short somewhat corymbose racemes, elongating as the fruit ripens; the pedicels filiform, without bracteæ. The calyx consists of four glabrous, ovate, deciduous, rather spreading sepals. The corolla is cruciform, of four rounded, spreading, white petals, twice as large as the calyx. The stamens are tetradynamous, with subulate white filaments, having four glands at the base, and are terminated by simple two-celled anthers. The germen is elongated, cylindrical, with a very short style, and an obtuse capitate stigma. The fruit is a pod or silique, about an inch in length, slightly compressed and curved, pedicellate, spreading, or somewhat declined, divided into two cells, separated by a partition, opening by two concave revolute valves, and containing several small rounded seeds arranged irregularly in two series. Plate 46, fig. 3, (*a*) entire flower, magnified; (*b*) stamens and pistil; (*c*) silique or pod.

Few plants are more frequent than this in the brooks, rivulets, and stagnant waters of Great Britain. It is likewise found in almost all other parts of the world. It flowers in June and July.

The generic name is derived from *nasus tortus, a convulsed nose*, in allusion to the acrid and pungent effects of the juice of the plant. Bauhin and Sprengel consider the Nasturtium officinale, the σισυμβριον ετερον of Dioscorides; which others refer to the Lady's Smock (*Cardamine pratensis*).

The genus Nasturtium, formerly included in Sisymbrium, contains three other species indigenous to Britain; the most common is the Amphibious Nasturtium, (*N. amphibium*,) distinguished by its oblong, pinnatifid or serrated leaves; branched stem two or three feet in height, and small, turgid, erect, spreading pods. They are all very distinct from the Water-cress in habit, and have yellow flowers.

General Uses.—Water-cress is well known as an agreeable and wholesome salad, in which character it is cultivated to some extent in the streams tributary to the Thames, and it forms an important article of rustic commerce. Large quantities are brought daily throughout the season to the London market. A running stream of clear water is essential to its successful cultivation. " The plants are inserted in the bed of the stream in rows in the direction of the current; and all that is necessary is, to take up and replant occasionally, and to keep the plants free of mud and weeds, or any accumulation of extraneous matter. They will not grow so freely in a muddy bottom as among sand and gravel, neither will their flavour be so good as when cultivated in natural streams. The spring or autumn is the best time for transplanting Water-cress." It is sometimes also cultivated in gardens where it can be frequently irrigated, but when thus raised, it is far inferior to that which grows in clear rivulets.

QUALITIES.—The foliage of Water-cress has a pungent taste, with a very slight bitterness, and when bruised its exhalations are volatile and acrimonious, affecting the eyes and nose, like bruised mustard-seed, but in a milder degree. This volatile principle rises in great part in distillation both with water and rectified spirit; but is dissipated by inspissating the infusion, or tincture, or the expressed juice, and scarcely exists in the dried plant. By distilling large quantities of the leaves with water, a small quantity of extremely pungent, bitter, volatile oil is obtained. It is also said to afford traces of sulphur and ammonia, like many other *Cruciferæ*, but we have no exact analysis.

MEDICINAL PROPERTIES AND USES.—As an article of diet, Water-Cress is very suitable for persons of a lymphatic temperament, where the skin is colourless, and the flesh moist and flaccid, and particularly for those subject to scorbutus or exposed to debilitating causes. In a more strictly medicinal light, it has been esteemed, in addition to its antiscorbutic virtues and its stimulating effects upon the digestive organs, as sialogogue, diuretic, and diaphoretic, and has been highly recommended in tertian fevers* where there is a scorbutic diathesis, in obstructions of the viscera†, chronic catarrhs‡, calculus of the kidneys, and embarrassments of the bladder §. Galen, according to Spielmann, recommended it in calculus. Others extol its effects in dropsy, melancholy, hypochondria, and hysteric affections; in restoring suppressed catamenia; in the resolution of abdominal enlargements supervening to intermittent fever, and in the cure of empyema. We can, however, scarcely credit the assertion of Bonet* and Pouteau†, that it has proved beneficial in purulent phthisis. In fine, this plant, though less powerful, nearly agrees with the Scurvy-grass, (*Cochlearia officinalis*,) with which it is often combined, as with other warm antiscorbutic plants; their acrimony being mitigated by the colder juices of Sorrel, Brooklime, &c.

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* Eugalen de Scorb. obs. 54.—Werlhof de Febr. p. 80.

† Haller Hist. st. Helv. n. 482.

‡ Zwinger Diss. de plantis nasturc. p. 49.

§ Zwinger, *l. c.*

Externally, the bruised plant has been applied with reputed benefit to white swellings. The juice frequently injected into the nose is said by Schroder and Ettmuller‡ to cure mucous polypi, and mixed with vinegar and used in the same way, to be useful in rousing lethargic patients. The bruised herb in the form of cataplasm has also been applied to the scald-head and tetters of children.

The expressed juice is the usual form of exhibition in the dose of one to three ounces, twice or thrice a-day, either alone, or associated with an acid, or mucilaginous liquid, or milk, according to the indication. The fresh plant may also be macerated in water in closed vessels. The alcoholic tincture is reputed to be stomachic and antiscorbutic; it is also a useful stimulant when added to gargles, &c. The juice mixed with honey is a suitable gargle for sore throat and aphthous ulcers of the mouth. The conserve, distilled water, and extract are seldom used, the two former are needless when the expressed juice can be obtained, and the latter is inert.

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* Sepulchr. tom. i. ed. Mang. p. 686.

† Œuvres posthumes, vol. i. p. 301.

‡ Opera, ed. cur. J. C. Westphali. *Amstel.* 1696, p. 612.

CLXXXIII.

RUMEX HYDROLAPATHUM.

Great Water Dock.

Class, &c. See Sorrel (*Rumex acetosa*).

Spec. Char. Enlarged petals ovate-deltoid, reticulated, each with a tubercle. Leaves lanceolate, lower ones cordate at the base. Whorls generally leafless.

SYNONYMES.

Latin	Lapathum aquaticum folio cubitali. *Bauh. Pin.* 116. *Tourn. Paris*, 280. Hydrolapathum magnum. *Ger. Em.* 389. Lapathum maximum aquaticum, sive Hydrolapathum. *Raii Hist.* 171; *Syn.* 140. Lapathum longifolium nigrum palustre, sive Britannica antiquorum vera. *Munt. Brit.* t. i. Rumex aquaticus. *Sm. Fl. Brit.* p. 394. *Eng. Bot.* t. 2104. Rumex Hydrolapathum. *Lin. Sp. Pl.* a *Willd.* ii. 257. *Eng. Fl.* ii. p. 295. *Reichenb. ic. Bot.* t. 370.
French....	Patience aquatique; Patience d'eau; Parelle de marais.
Italian....	Lapazio d'acqua; Idrolapazio.
Spanish...	Hidrolapazo.
Port......	Labaca major.
German ..	Wasserampfer; Wassermangold; Wassergrindwurzel; Rostampferwurzel.
Dutch	Waterpatigh; Groot Waterpatigh.
Danish....	Vandskreppe.
Swedish ...	Vatnsyra.

Description.—The root is perennial, large, thick, knotty, branched, reddish black externally, whitish internally, and furnished with numerous long shaggy fibres. The stem is erect, cylindrical, striated, smooth, leafy, branched at the summit, and varies in height from three to five feet. The lower leaves are large, spreading, lanceolate, acuminate, somewhat cordate at the base, often a foot and a half in length, slightly toothed and waved at the margin, rather glaucous, with strong channelled petioles frequently a foot in length, subtended by a small tubular, scariose stipula, or ochrea; the cauline leaves are gradually smaller, and the uppermost are linear-lanceolate, acuminate, more entire at the margin, and tapering into short petioles; the veins of the larger leaves are very prominent, and nearly at right angles with the midrib. The flowers are disposed in close spurious whorls, subtended by scariose bracteæ, forming a sort of panicle; each flower is pendulous on a slender peduncle thickened at the apex. The calyx consists of three small, ovate-oblong, acute, rather concave, erect, glabrous sepals, slightly cohering at the base. The three petals are ovate, obtuse, entire, greenish, veiny, longer than the sepals, and enlarging over the fruit, are called *valves*. The stamens are six, with short setaceous filaments tipped with oblong two-lobed anthers. The germen is superior, triquetrous, glabrous, supporting three very short setaceous styles with pencilliform dependent stigmas. The fruit is a triquetrous smooth nut, enclosed in the valves, which, at the period of maturation, are large, ovate-deltoid, veined, entire or very slightly waved at the margin near the base, and have each an oblong, greenish white, or purplish tubercle, extending down the middle. Plate 46, fig. 4, (*a*) ripe fruit, with the enlarged petals or valves; (*b*) pistil, magnified; (*c*) nut; (*d*) cluster of flowers in the early period of growth; (*e*) one of these flowers, slightly magnified.

This plant is commonly met with on the margin of rivers, pools, and ditches, flowering in July and August.

The origin of the generic name has been already explained. The specific term, *Hydrolapathum*, is a compound of υδωϱ, *water* and λαπαθον, *dock;* the latter being derived from λαπαζω, *to evacuate,* in allusion to the aperient qualities of some of the species. Muntingius and some others have supposed that the great Water-Dock is the βϱεταννικη of Dioscorides, and the *Herba Britannica* of Pliny.

The great Water-Dock has been frequently confounded with the *Rumex aquaticus* of Linnæus, but this appears to be distinct, in having no tubercles on the enlarged reticulated petals, and is similar in habit to the Curled Dock (*R. crispus*). For the characters of the various British species of Dock, we must refer to Sir W. Hooker's Flora, and other works. Of the foreign kinds the Patience Dock (*R. patientia*) has been celebrated for its medicinal qualities, but is inferior to some of our British species, such as *R. crispus, obtusifolius, acutus*, and *sanguineus*. The Alpine Dock or Monk's Rhubarb, (*R. alpinus*,) the root of which was formerly used as a succedaneum for common rhubarb, has been found wild in the Scottish Highlands.

The foliage of most of the Docks is slightly laxative, and that of *R. patientia* and *sanguineus*, is still used on the continent as spinach. Horace speaks of this property,—

> "Aut herba lapathi prata amantis, et gravi
> Malvæ salubres corpori."
>
> *Epod.* lib. Od. ii. v. 57.

> ——— "Si dura morabitur alvus,
> Mitulus et viles pellent obstacula conchæ,
> Et lapathi brevis herba."
>
> *Satir.* lib. ii. v. 27.

Qualities.—The fresh root has a slightly fragrant odour; and is at first of a reddish colour internally, but soon changes to a yellowish or yellowish brown hue by exposure to the air. It has a very astringent, austere, and bitter taste. The leaves are acescent and somewhat styptic. Water takes up the active matter of the root, and the aqueous infusion, which is of a yellowish or reddish brown colour, speedily assumes a black hue with sulphate of iron, and deposits a copious precipitate on the addition of solution of isinglass. Proof spirit also extracts much of its virtue. We have no analysis of this root, but it most probably contains tannin and gallic acid, oxalate of lime, *sulphur*, colouring matter, and extractive, with other less important constituents.

Medicinal Properties and Uses.—Muntingius *, a professor of botany and medicine at Groningen, wrote a treatise in which he endeavours to prove this plant to be the true Herba Britannica of the ancients; and in addition to the resemblance in their external characters, he adduces instances of the efficacy of the Water-Dock in stomacace, scelotyrbe, and putrid ulcers of the mouth and tonsils, in which affections, the plant before mentioned was extolled by Dioscorides* and Pliny†. He also contends that the term *Britannica* is not derived from the name of our island, but from the Teutonic words *brit, to consolidate; tan, a tooth;* and *ica* signifying *ejection*, expressing its power of fastening loose teeth, or of curing the disease which makes them loose. More recently the celebrated Linnæus‡ pronounced his favourable opinion of its effects in scorbutic diseases, both internally administered and externally applied. But notwithstanding these commendations, it has almost relapsed into oblivion, and is scarcely ever employed in the present day. It is certainly possessed of considerable powers as a remedial agent, and might be employed in various cutaneous diseases; also in that depraved habit of body which in many of its symptoms resembles scurvy; in obstructions of the viscera, hæmorrhages, hypochondriasis, dyspepsia, and a weakened relaxed state of the bowels. It has also those properties which would warrant its exhibition in intermittents.

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* De vera antiquorum Herbâ Britannicâ. *Amstelodami*, 1681.

Externally, as an epithema, it has been applied to scorbutic, gangrenous, and phagedænic ulcers, and the powder sprinkled over ulcers is reputed to assist their granulation and healing. Lotions or gargles of this root have also been used with success in ulcerations of the tongue and mouth§, relaxation of the uvula, sore throat, a spongy state of the gums, and looseness of the teeth. The root finely powdered is an excellent dentrifice, strengthening the gums, removing sordes, and obviating putridity; for this purpose, according to Murray||, it is a common article of the toilet with the Swedish ladies. The green leaves are likewise applied externally, with the same intention as the root.

The root may be given in substance, powdered, in the quantity of ten grains to half a drachm. If its purgative effects are required, from a scruple to half a drachm is the proper dose. When thus exhibited, it evacuates in the first instance any of-

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* Mat. Med. lib. iv. cap. 2.

† Hist. Nat. lib. xxv. c. 3.

‡ See his letter in Lind's Treatise on Scurvy, p. 264.—Amœn. Acad. vol. iv. p. 38.—Flor. Suec. p. 118.

§ Act. med. Berol. Dec. 2. vol. iii. p. 12.

|| App. Med. tom. iv. p. 345.

fending matter, but after a few doses, it exerts its astringent effects; hence it is particularly useful in diarrhœa. As a stomachic, about ten grains is a sufficient dose. It may also be given in the form of infusion * or decoction.

DECOCTION OF WATER-DOCK.

Take of Water-Dock root, sliced.......... two ounces.
Water .... three pints.

Boil down to two pints and strain. A little liquorice root or spirit of cinnamon may be added at the end of the boiling to improve the flavour.

Dose.—A wine-glassful twice or thrice a day. It has been recommended in the rachitis of children †.

An extract may also be prepared, but this appears almost superfluous. The vinous infusion is much praised by Muntingius and others; it may be given as a stomachic, and in the diseases already enumerated when they are exempt from fever and inflammation.

Some other native species of Dock, as *R. sanguineus*, *obtusifolius*, and *crispus*, are undoubtedly useful, particularly in cutaneous diseases. The root of the former was commended in elephantiasis by Aretæus ‡, and that of *R. obtusifolius* is said by Dr. Thomson § to be extremely efficacious in obstinate icthyosis.

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* "An infusion of this herb, under the name of its essence, has for some years past been sold in London, as a great specific for the scurvy, to the no small emolument of the proprietor, Dr. Hill."—*Lind. Treat. l. c.*

† Rosenstein om Barns sjukd. p. 405.

‡ Curat. diuturn. ii. c. 13.

§ London Dispensatory, 1837, p. 573.

CLXXXIV.

ŒNANTHE CROCATA.

Hemlock Water-Dropwort.

Class V. PENTANDRIA.—*Order* II. DIGYNIA.

Nat. Ord. UMBELLIFERÆ.

GEN. CHAR. *Calyx* of five teeth. *Petals* obcordate, emarginate, with an inflexed point. *Fruit* cylindrical-ovate, crowned by the straight styles. *Carpels* with five convex obtuse ridges, of which the lateral ones are marginal and a little broader. *Channels* with single vittæ.—General *Involucre* various; *partial* of many leaves. Flowers of the ray on long pedicels, sterile; those of the disk sessile or shortly pedicellate, fertile.

SPEC. CHAR. Leaves bipinnate, with wedge-shaped, deeply cut and toothed segments. General involucre few-leaved. Knobs of the root oblong-sessile.

SYNONYMES.

Latin.	Œnanthe Chœrophylli foliis. *Bauh. Pin.* 162. Œnanthe cicuta facie, succo viroso crocante. *Lob. Adv.* 326. Filipendula cicutæ facie. *Ger. Em.* 1059. Œnanthe cicutæ facie Lobelii. *Park. Theatr.* 894. *Raii Syn.* 210. Œnanthe crocata. *Lin. Sp. Pl.* 365. *Eng. Fl.* ii. p. 71. *Eng. Bot.* t. 2313. *Jacq. Vind.* iii. t. 55.
French	Œnanthe à suc jaune; Œnanthe safrané.
Italian . ..	Enante croceo; Filipendula da acqua.
Spanish ..	Enante con zumo amarillo.
German ..	Rebendolde; Rebendolde mit gelbsaft.
Dutch	Water-biesen.
Danish....	Vand-steenbrek.

DESCRIPTION.—The root is perennial, fasciculated, of several large fusiform tuberous bodies, furnished with long fibres, and exuding an acrid, fœtid, yellow juice. The stem is erect, strong, cylindrical, furrowed, hollow, smooth, tinged with yellowish red, much branched, (when wounded, exuding, like the root, a yellowish juice,) and attaining the height of three to five feet. The leaves are large, bipinnate, the pinnæ wedge-shaped or somewhat deltoid, trifid or quadrifid, incised and deeply serrated, smooth, veined, and of a deep green colour; the uppermost somewhat pinnatifid. The flowers are disposed in terminal spreading umbels, of many rays; the umbellules of numerous radii, sub-globose; the outermost flowers irregular, pedicellate and sterile, those of the centre regular, nearly sessile, and fertile. The leaves of the involucre and involucel are various in number and form, those of the former are usually about five and deciduous, of the latter, more numerous and small. The calyx is small, permanent, with a five-toothed margin, somewhat accrete after flowering. The petals are white, or tinged with purple, slightly radiant, obcordate, emarginate, and inflexed at the point. The filaments are slender, tapering, longer than the petals, tipped with oblong brownish anthers. The germen is inferior, ovate-oblong, supporting two subulate, reddish, erectly-spreading styles, terminated by acute stigmas. The fruit is linear-oblong, crowned by the permanent calyx and elongated styles, separable into two carpels, (marked with five obtuse ridges, of which the three intermediate ones are slender,) each containing a terete convex seed. Plate 45, fig. 4, (*a*) floret of the circumference; (*b*) floret of the centre or disk; (*c*) fruit.

This plant is frequent in watery places, osier-holts, and about the banks of rivers, in most parts of Britain, and is particularly abundant on the banks of the Thames, between Greenwich and Woolwich. It flowers in July.

Οιναvθη is a term applied by Theophrastus and Dioscorides to some plant of the umbelliferous kind, and is derived from οιvη, the *vine*, αvθος, a *flower*, alluding, it is supposed, to the vinous smell of the blossoms. Matthiolus, in his "Commentary," first applied the name to this genus. Lobel compares this species to the Hemlock, referring, we suppose, to some resemblance in its appearance or effects*. One of its old names, *Filipendula*, alluding to the fasciculated tuberous roots, has suggested the common name *Dropwort*,—also applied to the *Spiræa Filipendula*, a very different plant, which has, however, the same kind of root. Provincial names of this plant are, *Dead Tongue*, *Horse-bane*, and *Five fingered root.*

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* It is probably on account of its poisonous properties, that it still retains the name *Hemlock Water-Dropwort*, as the foliage, both in ap-

Six species of Œnanthe are enumerated as indigenous to Britain, including the subject of this article. The common Water-Dropwort, (*Œ. fistulosa*,) is distinguished by its fasciculate fibrous roots intermixed with tubers, and throwing out stolones from the neck; remarkably fistular stems, (about two feet in height,) the leaflets few and small at the extremity of the hollow leaf-stalk; umbels of few rays, generally destitute of involucre, and white or pale reddish flowers. The other species are less common, but all are poisonous, except the Pimpernel Water-Dropwort, (*Œ. Pimpinelloides*,) found in salt marshes, the tubers of which, in its cultivated state, are nutritive, and according to De Candolle, are eaten at Angers by the name of *jouanettes*. This plant may be known from its allies by the linear, entire, very long leaflets of the upper leaves, the general involucre of several linear leaves, and the thickly crowded umbellules with pale flesh-coloured flowers. The various species of *Œnanthe*, and especially the *crocata*, have sometimes been mistaken for the *Water Parsnep*, but this cannot occur if any attention be paid to the above characters.

Qualities.—The roots have not any very disagreeable smell or taste, but contain a virulent, poisonous, milky juice, which becomes yellow immediately it is exposed to the air, and which exudes, though less plentifully, from all parts of the herb, when wounded. We have no analysis of this substance, although it would be interesting to determine its relationship to the gum-resins of the same natural family,—*Galbanum*, *Ammoniacum*, &c., and its affinity with *Prussic acid*, which it certainly resembles in its poisonous effects. The root appears also to contain fæcula, and a saccharine matter.

Poisonous Properties.—The Hemlock Water-Dropwort is justly considered the most poisonous vegetable which this island

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pearance and odour, has more resemblance to parsley, smallage, or celery, than to hemlock, and the roots are more similar to parsneps; and these circumstances have been productive of unfortunate mistakes, as we shall presently relate. Johnson (*Ger. Em.* p. 1060) states, that in his time the roots were sold for those of *Peony*, and were daily vended in Cheapside by the name of *Water Lovage.*

produces. It has occasioned several fatal accidents, in consequence of the similarity of the leaves* to those of parsley or smallage, and more particularly from the resemblance that exists between its roots and those of the skirret (*Sium Sisarum*); besides which, its odour is not so unpleasant as to deter the unwary from eating it. The following are instances of its baneful effects.

"A citizen of the Hague, ate, with one of his friends, some of its roots. In a short time they both felt a great heat in the throat and stomach, which was followed by alienation of mind, vertigo, cardialgia, desire for sleep, and diarrhœa. One of them had violent convulsions, the other bleeding at the nose; the one who had eaten most, died in two hours, the other in three."†

"Three French prisoners, being in the fields near Pembroke, ate a quantity of the plant, which they took for *Wild Celery*, with bread and butter. One of them was soon after seized with violent convulsions, and died in a short time. The other two, ignorant of the danger, gave some of the roots to eight of their companions, and in a few minutes were attacked themselves, in the same manner as the first; one of them died; the other was cured by bleeding and emetics, but for some time he experienced a dizziness in the head, though his stomach was not disordered. The others, by similar treatment, quickly recovered."‡

"At Clonmel, in Ireland, eight boys, mistaking the roots of this plant for those of skirret, ate plentifully of them; about four or five hours after, the eldest boy became suddenly convulsed, and died; and before the next morning, four of the other boys died in a similar manner. Of the three who survived, one was maniacal several hours, another lost his hair and nails, but the third escaped unhurt."§

Allen, in his *Synopsis Medicinæ*, mentions that four children were poisoned by the root. In these cases great agony was experienced before the convulsions came on; then followed vomiting, which was aided by large draughts of oil and warm water, and they recovered. Dr. Houlston, of Liverpool, relates that a boy about nine years of age ate a large quantity of the roots, which he believed were ground-nuts, and gave some to his companions. As he was returning home he became giddy and unable to walk, and was soon affected with stupor and convulsions. "His mother, apprized of his situation, speedily came to him, and immediately, as she said, conceived the idea of his having eaten something, *the effects of which were similar to the poison administered to Sir T. Boughton.*" Some water was given him to drink, and he vomited a considerable quantity of the root, but he continued to grow worse, and Dr. Houlston was sent for. He found him totally insensible, strongly convulsed, the eyes starting from the sockets, the pupils excessively dilated, and the tongue thrust out. Appropriate remedies were tried, but they proved of no avail, and he died after more than four hours' suffering. Above a handful of the root was found in the stomach. The other boys who had partaken of the poisonous repast escaped, through the prompt administration of emetics ; one of them, however, was with difficulty made to vomit, though large doses of emetic tartar and ipecacuanha were administered, and he was affected with giddiness, drowsiness, and slight spasms for some hours. According to his own account, he had eaten one root (tuber ?) and a half, and more than two hours elapsed before he was sensibly affected *.

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* Sheep and goats are said to eat the leaves with impunity; cows and horses refuse it. According to Sir T. Frankland, brood mares are sometimes poisoned by eating the root. It is occasionally used as a poison for rats and moles.

† Stalpart Vanderweil Observ. pariorum, &c. t. i. p. 182.

‡ Philosophical Transactions, 1746, vol. 44. p. 227.

§ Ibid. *l. c.*

Dr. Pulteney † mentions the case of a poor woman who took about half a tea-cupful of the juice in mistake for that of *Water-Parsnep ;* she died in little more than two hours, with symptoms similar to those above related. Dr. Graves ‡ relates a similar fatal instance. M. Charles § was summoned to attend a family who had eaten the roots. A sensation of burning heat was present in the stomach, and small rose-coloured spots appeared successively in different parts of the body, and the abdomen in one case was greatly swollen. Mr. Watson || informs us, that a Dutchman was poisoned by the *leaves* boiled in pottage, and that Miller knew a whole family at Battersea who were poisoned by this plant. A few years ago a gang of convicts working on the embankments near Woolwich, dug up a quantity of the *Œ. crocata,* and as the roots are fleshy and sweetish, they were tempted to eat of them. Four of the unfortunate men died, and the rest were more or less disordered.

Mr. Froysell ¶ relates the case of a dairy-maid who ate a piece of the root, about the size of a walnut. Finding no effect result from it, except a slight degree of dizziness, in three hours she repeated the dose. An hour and a half subsequently she was found upon the bed in a state of insensibility. Mr. F. saw her a few minutes afterwards, when the pupil of the eye was contracted to the size of a pin's head ; she was speechless, and had lost the power of deglutition ; her pulse was 40, small and wiry, her skin cold and moist, especially over the hands and forehead. She had rejected part of the poisonous substance by vomiting previous to the arrival of Mr. F., and he suc-

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* London Med. Journal, 1781, vol. ii. p. 40.

† Ibid. 1784, vol. v. p. 192.

‡ Med. Facts and Obs. vii. p. 308.

§ Annales Clin. de Montpellier, n. 154.

|| Phil. Trans. vol. i. p. 856.

¶ In Lancet, March 1st, 1834—(Vol. xiii., N.S., p. 861.)

ceeded in dislodging the remainder of it by means of the stomach-pump and an emetic of sulphate of zinc; shortly afterwards she began to speak incoherently; she was then ordered to be kept constantly in motion, and after repeated draughts of vinegar and water she perfectly recovered.

The same gentleman states, that a few days previous to the above occurrence, seven cows were destroyed by eating a quantity of the roots of this plant, which had been thrown up by some labourers in clearing a water-course.

It is doubtful whether all the foregoing narratives of poisoning by the Water-Dropwort are really to be attributed to it, for the resemblance between many of the umbelliferous plants is so great, that the casual observer is apt to confound them; in addition to this, some of the vernacular names (and anciently, the scientific) are by no means explicit. With regard to the case that occurred at Pembroke, Mr. Salisbury (Botanist's Companion, Vol. II. p. 134) tells us he was informed that the Œnanthe does not grow there, and that what the unfortunate French prisoners did actually eat was the *Wild Celery*, which is plentiful in all the wet places near that town.

TREATMENT.—The principal object in cases of poisoning by this rapidly destructive plant, is the ejection of the offending matter by the prompt administration of an emetic. Twenty grains of sulphate of zinc, (white vitriol,) from thirty to forty grains of ipecacuanha, or six or seven grains of emetic tartar may be exhibited; the first is preferable, but if in country places none of these can be quickly procured, common table mustard may be substituted. Blood-letting is necessary to subdue the inflammatory symptoms. Mucilaginous and diluent drinks may be given freely; and when the violence of the primary symptoms has abated, the vegetable acids may be exhibited. The affusion of cold water upon the head having proved exceedingly beneficial in analogous cases, should not be forgotten; and the administration, or rather the inhalation of dilute ammonia, deserves to be tried.

MEDICINAL PROPERTIES AND USES.—We have introduced this plant chiefly on account of its poisonous properties, its value as a remedial agent being undetermined and uncertain. Still it deserves, by skilful and judicious hands, to be essayed in some of those rebellious and chronic diseases which defy the power of ordinary remedies. If the axiom be correct, "*ubi virus ibi virtus*," the Water-Dropwort certainly deserves attention. The only recorded case of its internal use is that given by Dr. Pulteney *, of a man who, from the age of fifteen to forty, was affected with a most severe cutaneous eruption, which had resisted every proposed remedy. "At length he was recommended to take every morning fasting, a table-spoonful of water-parsnep in two spoonsful of white wine; and the person who recommended this remedy, procured him about half a pint of what he said was the juice of water-parsnep. The first dose produced such vertigo, sickness, vomiting, cold sweats, and long continued rigor, that it almost proved fatal. So strong, however, was his desire of relief, that with the intermission of one day, he repeated it in nearly the same dose. It was followed by the same sickness and vomiting as before, but the succeeding rigor was by no means so violent. He was obliged, therefore, gradually to reduce the dose to about half the quantity he had taken at first. Before he had taken this juice a month, he was sensible of a very great change for the better, and by persisting in it for some time longer, his symptoms were almost entirely removed. It deserves to be remarked, that this juice never purged, although, even in its reduced dose, it never failed to occasion vertigo, nausea, and sickness, which were soon relieved if vomiting supervened. After he had thus far recovered, he desisted from the juice, but drank every morning for breakfast an infusion of the leaves. This infusion neither excited nausea nor sickness, but always brought on a slight degree of vertigo. The only sensible operation he could observe from the plant was, that it produced an increased flow of urine, in which there was a copious sediment." Dr. Pulteney afterwards discovered that it was the juice of the root of *Œnanthe crocata* that had been taken.

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* Phil. Trans. vol. 62.—and Med. Commentaries, vol. ii. p. 31.

Externally, the herb is used in some parts of the country in the form of cataplasm for the *felon*, or the worst kind of whitlow *.

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* "Mr. Gough informs me, that the country people in Westmorland apply a poultice of the herb to the ulcer which forms in the fore-part of the cleft of the hoof in horned cattle, and is called 'the foul.'" *Withering Bot. Arrang.* vol. ii. p. 379.

CLXXXV.

CICUTA VIROSA.

Water-Hemlock, or Cowbane.

Class V. PENTANDRIA.—*Order* II. DIGYNIA.

Nat. Ord. UMBELLIFERÆ.

GEN. CHAR. *Calyx* of five teeth, leafy. *Petals* obcordate, with an inflexed point. *Fruit* roundish, contracted at the sides, didymous. *Carpels* with five, nearly plane, equal ridges, of which the lateral ones are marginal. *Channels* with single vittæ, elevated nearly to the ridges. *Seed* terete.—*General Involucre* of few leaves or none; *partial* of many leaves.

SPEC. CHAR. Leaves biternate; segments lanceolate, serrated. Umbels opposite the leaves and terminal.

SYNONYMES.

Latin.	Sium erucæ folio. *Bauh. Pin.* 154. Sium alterum olusatri facie. *Ger. Em.* 256. *Raii Hist.* 450; *Syn.* 212. *Lob. ic.* i. 208. Sium majus alterum angustifolium. *Park. Theatr.* 1241. Cicuta aquatica. *Wepfer. Hist.* 4. Cicutaria aquatica. *Lam. Dict.* ii. p. 2. Coriandrum Cicuta. *Roth. Germ.* i. p. 130. Cicuta virosa. *Lin. Sp. Pl.* 368. *Eng. Fl.* ii. p. 62. *Eng. Bot.* t. 479. *Blackw. Herb.* t. 574. *Œd. Fl. Dan.* t. 208.
French. ..	Cigue aquatique; Cicutaire aquatique.
Italian	Cicuta aquatica.
Spanish. ..	Cicuta aquatica.
Portuguese.	Cegude aquatica.
German. ..	Wasserschierling; Wüterich; Wuthschierling.
Dutch	Water-Scheerling; Dolle-Kervel.
Danish....	Skarn-tyde; Wandpastinak; Sprengrod.
Swedish. ..	Sprœngœrt.
Polish	Wodna Cykuta.
Russ	Omeg.

DESCRIPTION.—The root is perennial, very thick, hollow, whitish, annular, divided by transverse partitions into several large cells, and furnished with many fibres, disposed in whorled fascicles*. The stem is erect, large, hollow, branched, leafy, slightly striated, glabrous, light green, from two to four feet in height; the lower flowering branches are alternate, shorter than the stem, the uppermost opposite, longer than the stem. The leaves are alternate, petiolate, biternate; the lower ones sometimes triternate or pinnated, and from twelve to sixteen inches in length; the leaflets with lanceolate, deeply serrated, nearly sessile segments; the serratures whitish at the points. The umbels are large, of many rays, both opposite the leaves and terminal, with an involucre of a few linear pinnatifid leaves, or wanting, and an involucel of numerous subulate reflex-spreading leaves. The calyx is divided into five small ovate-deltoid, acute, spreading segments. The corolla is white, sometimes with a slight tinge of green or flesh colour; of five obcordate acute petals, inflexed at the points. The five filaments are subulate, white, spreading, longer than the petals, tipped with didymous flesh-coloured anthers. The germen is ovate-turbinate, glabrous, supporting two short styles, at first connivent, erect, afterwards divaricating, terminated by simple stigmas. The fruit is roundish, compressed at the sides, didymous, crowned with the teeth of the calyx, the fleshy disk and the divaricating styles, and separating into two carpels. (See GEN. CHAR.) Plate 46, fig. 1, (*a*) calyx; (*b*) entire flower, magnified; (*c*) fruit.

The Water-Hemlock is found in ditches, and by the margins of rivers and lakes, though rather local in England, but is more frequent in the lowlands of Scotland. It flowers in July and August.

Cicuta was a name given by the Latins to the space between the joints of a reed, used as a shepherd's pipe, and hence applied to

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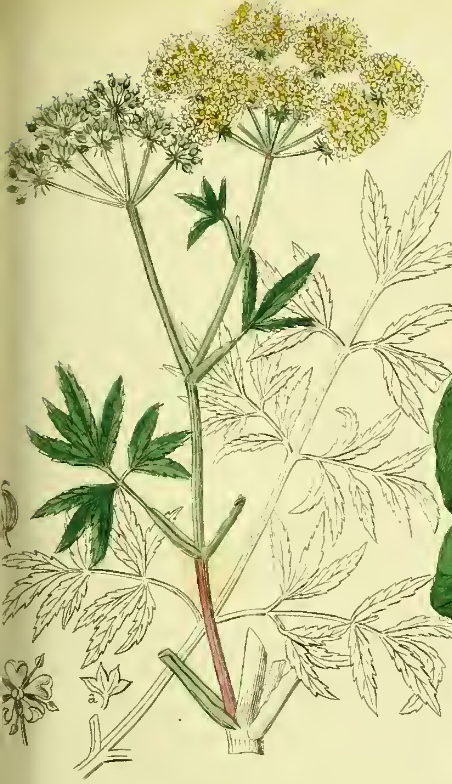
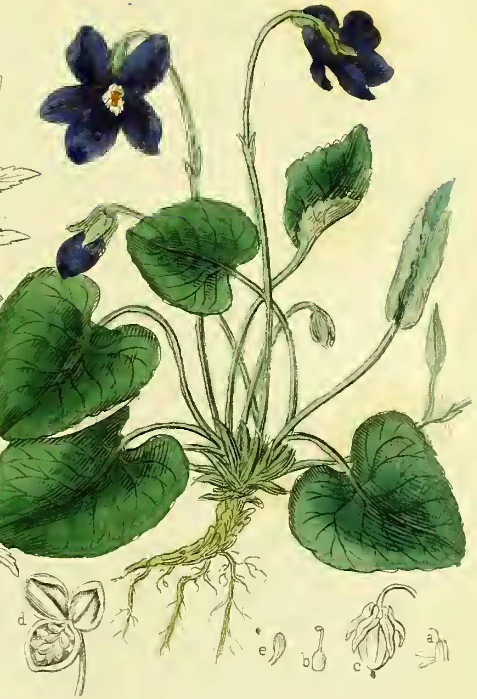
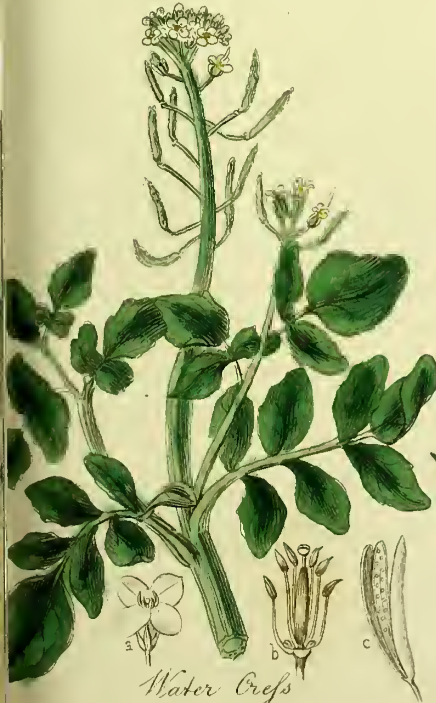
* Towards the end of autumn, the root for the succeeding summer is formed out of the lower part of the stalk; this is divided transversely into many large unequal cells, so that it becomes specifically lighter than water, and in winter, when the rivers or pools swell is buoyed up. The old root then rots, floats all the winter, and in rivers is frequently carried to great distances. In the spring the old root is washed away, and the new one, on coming near the soil, sends out many slender fibres, by which it is again fixed, grows and flowers. *Watson* in *Phil. Trans.*



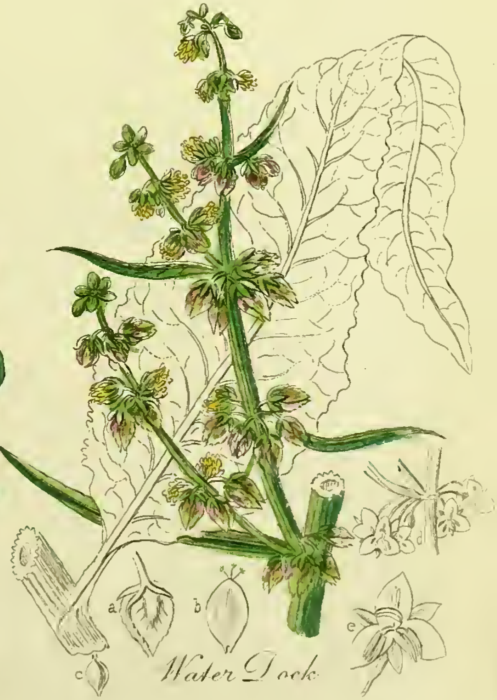
Water-Hemlock



Violet



Water Cress



Water Dock

this plant, which has hollow stems. It is doubtful whether our Water-Hemlock or the Spotted Hemlock is the *Cicuta* of Pliny, who evidently intends by that name the κωνειον of the Greeks, and the Athenian state-poison *. Haller is of opinion that this poison was obtained from our *Cicuta virosa*, and not from *Conium maculatum*. But if the account of the death of Socrates, in the *Phædon* of Plato, be a correct and not an embellished or fictitious narrative, the same objection applies to one as to the other. It is astonishing that the Water-Hemlock should be associated by some of the old botanists with *Sium*, or *Water-Parsnep*, and called by Gerard "long-leaved Water-cresses," without any allusion to its poisonous properties. This plant is generally intended by the old authors when they use the term *Cicuta*, but the Spotted Hemlock (*Conium maculatum*) was also called Cicuta, and there is reason to fear that they have sometimes been confounded †. Wepfer ‡, indeed, confounds the Water-Dropwort, described in the preceding article, with the present species; and it is not improbable, that the same error has been committed by others who speak of the roots being eaten in mistake for parsneps, unless, indeed, we ascribe to those who partook of them more than a common share of ignorance,—the large, annular, hollow root having very little resemblance to a parsnep.

Qualities, &c.—The root, wounded in spring, pours forth a yellowish juice, which is principally contained in the vessels of the cortical part. It has a heavy narcotic odour, and an acrid, hot taste. The lower leaves are said to have the same properties in a less degree. The foliage, when bruised, smells like celery, but is more pungent, and its flavour has been compared to that of parsley. Wepfer § has remarked on the wounded parts of the main stalk small concretions of a blueish transparent viscous substance, of a slightly acrid nature. Gadd ‖ states, that when the plant vegetates in stagnant pools, a liquid of an oily shining appearance may be observed on the surface of the water. From the experiments of Gadd we also learn, that by distillation it affords a volatile narcotic principle of an unpleasant diffusive odour, affecting the head; but the residue is apparently inert, and was given to a bird without producing any effect. It appears that both the narcotic and acrid principles are of a volatile kind, so that even the roots in their dried state have been given as food to cattle [*]. When cultivated in a garden, it is reputed to lose its virulent qualities.

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* "Cicuta quoque venenum est publica Atheniensium pœna invisa." *Plin. Hist.* lib. xxvi. c. 13. The description given by Dioscorides of the κωνειον is perhaps more accordant with the *Cicuta* than with the *Conium*.

† The Œnanthe Phellandrium (*Phellandrium aquaticum*, Linn.) has also been called *Water-Hemlock*, and *fine-leaved Water-Hemlock*.

‡ Cicutæ aquaticæ Historia et noxæ. *Basil.* 1679.

§ Lib. cit.

‖ Lib. et loc. cit.

Poisonous Properties. — The whole plant is poisonous to most animals. According to Withering, cows often eat it in spring, and are killed by it, but as the summer advances, and its scent becomes stronger, they carefully avoid it. Though a certain and fatal poison to cows, goats [†] devour it greedily with impunity; horses and sheep eat it with safety [‡]. Gmelin asserts that it is innocuous to horses, but Gadd denies this. Of its poisonous effects upon cows there can be no question. Three oxen died from eating the roots, which were thrown by the current in spring upon the banks of a river near Roslagia, in Sweden [§]; and Gadd [||] asserts that two oxen were destroyed in Finland by drinking the oily substance already mentioned, which floats on the surface of the water near which the plant grows; this writer, however, suspects that part of its deleterious effects may be owing to an insect by which the plant is infested, as is known to be the case with respect to *Œnanthe Phellandrium.* Linnæus [¶] found that a disease which carried off a great number of cattle every spring at Tornea in Westrobothnia, was occasioned by the Water-Hemlock. This discovery was the more important, as the affection was of such a nature, that in flaying the animals, although yet warm, wherever their blood came in contact with the human body, it caused inflammation and gangrene, and even the exhalations from the carcases had a similar effect. This illustrious naturalist is of opinion, that the Water-Hemlock is more energetic than the Spotted Hemlock, and less so than the Hemlock Water-dropwort. The root appears to be most virulent in spring, and the foliage in summer. Wepfer relates, that the root is poisonous to dogs, wolves, and eagles, and the leaves, though less powerful, have proved fatal to geese. He observed that dogs began to stagger soon after swallowing the poison, and were dejected or agitated, and their heads trembled; after which they experienced thirst, and frequent eructations, and a greenish foam flowed from their mouth; then followed vomiting, diarrhœa, enuresis, and convulsions.

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[*] Vet. Acad. Handl. *l. c.* Gunner Fl. Norweg. tom. i. 27.

[†] See *Hemlock* for the lines quoted from Lucretius, who probably refers to this plant.

[‡] Withering, Bot. Arrang. vol. ii. p. 382.

[§] Linn. Wästgöta resa, p. 98.

[||] Loc. cit. p. 234.

[¶] Flora Lapponica, ed. Smith, p. 76.

The effects of this plant upon man are those of a powerful acrid narcotic, having much affinity with the Water-dropwort already delineated, although more decidedly narcotic than the latter, which Orfila therefore places among the acrids, and the Water-Hemlock among the narcotico-acrids.

Wepfer tells us of eight children who ate of the root, mistaking it for *parsnep.* One of them quickly experienced great pain at the pit of the stomach, "et humi prostratus urinam magno impetu ad viri altitudinem eminxit." He was then seized with convulsions and became insensible; the jaws were locked, the eyes rolled, and blood issued from the ears; he had frequent hiccup and efforts to vomit, and during the convulsions the head was bent backwards, and the spine so arched that a child might have crept between the body and the bed beneath. He gradually became weaker, and his death took place about half an hour from the first appearance of the symptoms. After death the abdomen and face swelled, a slight lividness was observed near the eyes, and a greenish froth issued from the mouth. Another of the children died, and of the six who survived, a little girl had tetanic fits, followed by complete coma, which lasted for twenty-four hours.

Boerhaave states, that a gardener employed in gathering the herb, was attacked with vertigo. Schubarth* affirms, that an ounce of the juice of the stem and leaves, collected after the flowers had begun to blow, produced no effect upon the dog.

Referring to the cases given by Wepfer, Schwencke, and others, Guersent † observes, that the following are the usual symptoms:—"Dimness of sight, vertigo, acute headache, staggering, agitation, pain in the stomach, dryness of the throat, great thirst, eructation, vomiting of greenish matter, respiration frequent and interrupted, tetanic contraction of the jaws, lipothymia, sometimes followed by a lethargic state; at other times furious delirium, or attacks resembling epilepsy, which generally terminate in death. The most serious derangement of the nervous system takes place the more rapidly in proportion to the quantity of the root swallowed, unless, indeed, a portion has been promptly rejected by vomiting." Mertzdorff ‡ has inspected three cases which proved speedily fatal with convulsions and vomiting, but observed nothing remarkable, except extreme gorging of the vessels of the brain.

Treatment.—Cases of poisoning by Water-Hemlock are happily rare, and we know of no instance in Britain. If any such should occur, the treatment recommended under Water-Dropwort, Nightshade, or Hemlock, is to be followed.

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* Archiv. für Medizin. Erfuhr. 1824. i. 84.

† Article *Ciguë.* Diction. des Sciences Med.

‡ Journal Complimentaire xvii. 361. See also Murray Appar. Med. tom. i. p. 399.

Medicinal Properties and Uses.—The properties of this plant as an internal remedy, can scarcely be said to have been essayed by any practitioner, although both as a poison and a therapeutical agent, an investigation of its powers would be not less useful than interesting*. It is presumed to be analogous to the Conium, or Common Hemlock, and still more energetic in its effects than that vegetable, for which, indeed, it is substituted in the Danish Pharmacopœia. We have several accounts of its empirical use externally. Thus in an endemic disease prevalent in Westphalia, called *Varen*, resembling wandering gout, in which abscesses are formed, a cataplasm of the root has been applied with success †. The Siberians use it in the same form as a remedy for venereal herpes; and in pains affecting the back and ischiadic region, they rub the part with the bruised root, taking great care not to touch the spine, lest the malady should be aggravated ‡. In the same manner the Kamschatdales use it in lumbago, by rubbing the affected part before the fire §. In Norway also, it is used as an external remedy for gouty pains ||.

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* Bergius, (Mat. Med. i. p. 214,) has the following account of his experience with it. "I have never exhibited the Cicuta in its recent state, but I have given pills made of the expressed and inspissated juice, and the powdered leaves to a female labouring under cancer of the breast. I began with a small dose, which was gradually increased to three drachms daily, but no sensible effect was produced. I prescribed for another person a saturated decoction of the dried herb to be applied externally; he by mistake drank the whole, amounting to four pints, within two hours, but experienced no ill effects." From this it is evident that the dried plant is effete, and if any good effect is obtained it must be from the fresh root, or its milky juice.

† Wyer in Smetii Miscell. Med. lib. iv. p. 240.

‡ Gmelin Fl. Siber, tom. i. p. 202.

§ Hist. of Kamschatka, p. 220.

|| Gunner, *l. c.*

CLXXXVI.

SIUM NODIFLORUM.

Procumbent Water-Parsnep.

Class V. PENTANDRIA.—*Order* II. DIGYNIA.

Nat. Ord. UMBELLIFERÆ.

GEN. CHAR. *Calyx* of five teeth, or obsolete. *Petals* obcordate with an inflexed point, or entire and ovate. *Fruit* laterally compressed, or contracted and subdidymous, crowned with the depressed disk and reflexed styles. *Carpels* with five equal filiform ridges, of which the lateral ones are marginal. *Channels* with one or many vittæ. *Seed* subterete.

SPEC. CHAR. Stem procumbent, rooting. Leaves pinnate; leaflets ovate, nearly equally serrated. Umbels opposite the leaves, sessile.

SYNONYMES.

Greek....	σιον.
Latin....	Sium umbellatum repens. *Ger. Em.* 258. *Raii Hist.* 441; *Syn.* 211. Seseli nodiflorum. *Scop. Carn.* ii. p. 353. Helosciadum nodiflorum. *Koch. umb.* p. 126. Sium nodiflorum. *Lin. Sp. Pl.* 361. *Eng. Fl.* ii. p. 57. *Eng. Bot.* t. 659.
French...	Berle nodiflore.
Italian ..	Sio.
Spanish ..	Berra; Berra postrada; Sio; Sion.
German ..	Wassermerk; Knotenblümigermerk; Kleiner Eppich.
Dutch....	Water-Eppe.

DESCRIPTION.—The root is perennial, long, creeping, and beset with numerous fibres. The stem is procumbent, rooting, striated, jointed, thick, succulent, branched, usually floating on the water, and seldom reaches a foot in length. The leaves are alternate, pinnate, composed of three or four pair of pinnæ and a terminal one, which are ovate, or elliptical, acute, sessile, nearly equally serrated ; those of the radical leaves have sometimes a lobe at the base on the upper margin. The flowers are disposed in umbels, which are sessile or nearly so, and opposite the leaves, composed of six to nine general and partial radii ; the involucre of one deciduous leaf or wanting, the involucel of five to seven ovate-lanceolate reflexed leaves. The calyx is small and indistinct, five-toothed. The five petals are white, ovate, entire, slightly incurved at the apex, and somewhat radiant. The five filaments are slender, spreading, rather longer than the corolla, and tipped with roundish anthers. The germen is small, inferior, supporting two short reflexed styles, terminated by obtuse stigmas. The fruit is ovate-turbinate, slightly compressed laterally. (See GEN. CHAR.) Plate 47, fig. 2, (*a*) entire flower, magnified; (*b*) fruit, natural size; (*c*) the same magnified.

This plant is common by the sides of rivulets, lakes and ditches, flowering in July and August.

The generic name originates in the Greek *σιον*, which is either a radical word, or as Theis supposes, derived from the Celtic *siw*, signifying *water*. The species before us is called provincially *Water-Skirret.*

The three principal indigenous species of Sium, are the procumbent, (*S. nodiflorum,*) the broad-leaved, (*S. latifolium,*) and the narrow-leaved, (*S. angustifolium*). The Broad-leaved Water-Parsnep, (*S. latifolium,*) is a strong erect plant, four or five feet high, the leaves pinnated, with oblong-lanceolate equally serrated leaflets, of which the submersed ones are often much cleft and jagged ; the umbels terminal, and the involucre of several leaves. The Narrow-leaved Water-Parsnep, (*S. angustifolium,*) is distinguished by its erect stem from two to three feet in height, pinnate leaves with unequally lobed and serrated leaflets, pedunculate umbels opposite the leaflets, and involucre of several, usually pinnatifid leaves. These, with the species above delineated, (*S. nodiflorum,*) particularly the latter in its early stages of growth, have been mistaken, by the inexperienced, for Water-Cress ; which is very distinct in the undulated and slightly angular, not serrated outline of its leaflets, and in the petioles or leaf-stalks being not sheathing at the base. It is also satisfactory to know that unless large quantities are eaten of the leaves of the Procumbent Water-Parsnep, there is no danger to be apprehended from the mistake. The Skirret, (*S. Sisarum*,) a native of the East, is cultivated for the sake of its roots, which boiled and eaten with butter are sweet and agreeable.

QUALITIES.—The fresh leaves of this plant are rather succulent, nearly inodorous, and very slightly acrid and bitter to the taste. The virtues of the plant are lost in drying, being wholly contained in the volatile principle of the juice, which, in addition to its slight acrimony, probably contains some saline ingredients ; but we have no analysis.

MEDICINAL PROPERTIES AND USES.—This plant is reputed to be a mild antiscorbutic, diuretic and deobstruent. It was formerly admitted into the London Pharmacopœia as a corrector of acrid humours, especially when manifested by cutaneous eruptions and tumours of the lymphatic system. It has long been known as a popular remedy for what are called scorbutic complaints *. Dr. Withering gives the following account of its utility in cutaneous affections : " A young lady, six years old, was cured of an obstinate cutaneous disease, by taking three large spoonsful of the juice twice a day ; and I have repeatedly given to adults three or four ounces every morning in similar complaints with the greatest advantage. It is not nauseous, and children take it readily if mixed with milk. In the doses I have given it neither affects the head, the stomach, nor the bowels." † Dr. Underwood ‡ also recommends the expressed juice in those eruptions which infest the face and neck of children, discharging a sharp ichor that excoriates the parts, and are difficult of cure by mineral alteratives.

Of the other species of Sium already enumerated, the *S. angustifolium* has been generally considered to possess similar properties to the above; as also the *S. latifolium*, but we should advise small commencing doses, as the roots of the latter are known to be poisonous to cattle.

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* By ignorant persons who only know the name of the plant, and that it grows in watery situations, the Water Dropwort has been gathered in mistake, and has given rise to serious accidents, as mentioned when speaking of that plant.

† Bot. Arrang. ed. v. vol. ii. p. 376.

‡ Diseases of Children, vol. i. p. 95. ed. IV.

CLXXXVII.

ALISMA PLANTAGO.

Greater Water Plantain.

Class VI. HEXANDRIA.—*Order* V. POLYGYNIA.

Nat. Ord. ALISMACEÆ.

GEN. CHAR. *Calyx* of three sepals. *Petals* three. *Capsules* numerous, clustered, distinct, indehiscent, one-seeded. *Embryo* much curved.

SPEC. CHAR. Leaves ovate, acute. Fruit depressed. Capsules obsoletely trigonal.

SYNONYMES.

Greek	*αλισμα.*
Latin	Plantago aquatica latifolia. *Bauh. Pin.* 190. Plantago aquatica. *Raii Hist.* 618. *Syn.* 257. *Dod. Pempt.* 596. *Cam. Epit.* 264. Plantago aquatica major. *Ger. Em.* 417. *Park. Theatr.* 1245. Alisma Plantago. *Lin. Sp. Pl.* 486. *Eng. Fl.* ii. p. 203. *Eng. Bot.* t. 837.
French ...	Plantain d'eau; Grand Plantain d'eau; Fluteau plantaginé.
Italian....	Piantaggine acquatica.
Spanish....	Llanten aquatica.
German ...	Froschlöffel; Froswegerich; Wasserwegerich.
Dutch	Water-Weegbree; Groote Water-Weegbree.
Danish	Vard Vegbreed.
Swedish ...	Stöckra.
Polish	Badkawodna.

DESCRIPTION.—The root is perennial, somewhat bulbous, covered with a whitish epidermis, and is furnished with a tuft of numerous descending fibres. The stem or scape is erect, obtusely three-cornered, naked, smooth, tinged with purple, and rises to the height of two or three feet. The leaves are all radical, ovate *, cordate at the base, acute, smooth, entire, nearly erect, slightly waved, marked with a prominent midrib, and about six parallel-converging secondary ribs ; they are all on long, tapering petioles, which are deeply channelled, sheathing and purplish at the base. The flowers are terminal on the scape, and are disposed in a long panicle of distant spreading whorls, generally of six branched radii in a whorl, alternately longer and shorter ; the peduncles obtusely three-cornered, with membranous, sheathing, marcescent stipulæ at the base. The calyx consists of three ovate, concave, spreading, striated sepals, membranous at the margin. The corolla † is composed of three roundish spreading petals, of a very pale rose-purple colour, rather jagged at the edge, shrivelling, furnished with short yellowish claws. The stamens are six, with subulate slightly incurved filaments, tipped with greenish anthers. The germens are small, placed in a circle, numerous, (about eighteen,) each supporting a filiform erect style and a simple stigma. The fruit consists of several clustered, depressed, ovate, obsoletely trigonal capsules, indehiscent, each containing a single seed. The seed is destitute of albumen, and the embryo is shaped like a horse-shoe. Plate 47, fig. 1, (*a*) entire flower; (*b*) the same viewed at the back to show the calyx; (*c*) pistil.

The Great Water-Plantain is very common on the margins of lakes, rivers and ditches, flowering from July to September.

The generic name is derived from *alis*, *water* in Celtic. The present species has been considered by some to be the λειμωνιον, and νευροιδες, of Dioscorides, and the Beta sylvestris of Pliny, but there is no means of deciding the point. The common name *Water-Plantain*, refers to the resemblance between its leaves and those of the Common Plantain ; it is also called *Greater Thrumwort*.

It is singular that nearly all the older botanists should have placed this plant among the Plantains, which it resembles merely in its leaves, while in natural character and qualities it has more analogy with the *Ranunculus* tribe, although its embryo is monocotyledonous. Tournefort*, however, calls it "*Ranunculus palustris, plantaginis folio.*"

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* There is a variety with lanceolate leaves.

† The blossoms fully expand between three and four in the afternoon.

The foliage of Water-Plantain is of an acrid nature and deleterious to sheep and cattle; but according to the Swedish experiments, it is eaten by goats and horses.

Qualities.—The root contains an acrid juice, which being removed by expression, or dispersed by boiling, the residue is an amylaceous fecula of a nutritive character, and is said to be commonly eaten by the Kalmuc Tartars. The fresh leaves also contain an acrid principle of a fugitive kind, so that when thoroughly dried they are inert. Hence it appears that the Water-Plantain, in the volatility of its acrid principle, has much analogy with the *Ranunculaceæ,* and with such of the *Umbelliferæ* as grow in water.

Medicinal Properties and Uses.—The root of Water-Plantain, was a few years since, greatly eulogised, particularly in Russia, as a remedy for hydrophobia, but it is probably of no greater value than other pretended specifics for that horrible disease. Lewshin, Burdach, Moser, and others have, indeed, published several cases in which it acted apparently as an antilyssic, given internally to the extent of 2½ drachms daily, and the leaves applied in the form of poultice to the wound. The powdered root has also been given with reputed success as a substitute for Bearberry, in cases of irritable bladder; and De Haen states, that the root, macerated in wine, has procured relief in calculus. The fresh leaves applied to the surface of the skin have an irritant and vesicatory effect. According to Ettmuller†, they have been applied to the wrists of those labouring under intermittent fevers, with marked success; he also asserts that the same bruised and applied to the œdematous legs of dropsical subjects, excite copious vesicles, by the puncture of which the serum is drawn off and great relief afforded. Probably the leaves of some of our indigenous plants might be used with advantage not only in the above-mentioned but in other diseases, where it is desirable to determine to the surface. The leaves of Burdock, Water Lily, Clematis, Meadow-Rue, and with those of the plant here described might be employed with such an intent. Dr. Hancock, we believe, mentions that the natives of South America are accustomed to enwrap the whole body with certain kinds of leaves for the cure of diseases of a rheumatic and dropsical character.

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* Inst. p. 292.

† Opera cur. J. C. Westphali. (In Pharm. Schröd. p. 630.)

Boccone recommends the root of the Water-Plantain in hæmorrhoids, as observed by Haller*, who, however, very reasonably questions the propriety of its employment in that affection. It has also been advised by some of our old English writers on medical plants as a good application to the breasts of nurses for the purpose of repelling the milk. We mention this chiefly by way of caution, as there can be no doubt that its application in either of these cases would be not only unsuitable but dangerous. The error most likely arose from the Water-Plantain being arranged among the true Plantains, and hence the reputed cooling properties of the latter were ascribed to the plant before us. The herb, like the Crowfoot, seems not well adapted for internal use, and is said to produce atrophy and immobility of the posterior parts of the body in cattle that have fed upon it.

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* Hist. st. Helv. n. 1184.

CLXXXVIII.

SALIX ALBA.

Common White Willow.

Class XXII. Dicecia.—*Order* I. Diandria.

Nat. Ord. Salicineæ.

Gen. Char. Male Flowers:—*Scales* of the catkin one-flowered, imbricated, with a nectariferous gland. *Perianth* none. *Stamens* one to five. Female Flowers:—*Scales* as in the male. *Perianth* none. *Stigmas* two; often cleft. *Capsule* one-celled, two-valved, many-seeded. *Seeds* comose.

Spec. Char. Leaves elliptic-lanceolate, regularly glandulose-serrate, acute, silky. Scales short, pubescent at the margin. Germens ovate, acuminate, sub-sessile, glabrous. Stigmas nearly sessile, short, recurved, bifid.

SYNONYMES.

Greek	ιτεα.
Latin	Salix vulgaris alba arborescens. *Bauh. Pin.* 473. Salix. *Ger. Em.* 1389. *Dod. Pempt.* 831. Salix Dioscoridis. *Lob. obs.* 567. Salix arborea angustifolia alba vulgaris. *Park. Theatr.* 1430. Salix alba. *Lin. Sp. Pl.* 1449. *Eng. Fl.* iv. p. 231. *Eng. Bot.* t. 2430.
French. ..	Saule; Saule blanc; Saule commun.
Italian ...	Salce; Salce bianco; Salice bianco; Salcio.
Spanish ..	Sauce blanco; Salce blanco.
Port.	Salgueiro; Salgueiro branco.
German ..	Weide; Weisse Weide.
Dutch	Wilg boom; Witte Wilg.
Danish. ..	Hvid pül.
Swedish ..	Hvit pihl.
Polish	Kora wierzbowa.
Japan	Jeno ki.

Description.—This tree attains the height of twenty-five to thirty feet, having a straight trunk, covered with cinereous cracked bark; the branches numerous, erectly spreading, covered with a grey, reddish, or brownish green bark; the inner bark green. The leaves are alternate, petiolate, elliptic-lanceolate, acuminate, shining and pubescent above, white and silky beneath, acutely serrated, the lower serratures glandulose. The male flowers * are disposed in pedunculate, cylindrical, obtuse catkins, from an inch and a half to two inches in length, subtended by a few bracteæ, and composed of imbricated, oblong hirsute scales, tinged with brown and crimson; each scale including two stamens, which are furnished with an obcordate, nectariferous gland in front, and an oblong one behind. The female flowers constitute slender, cylindrical catkins, on long peduncles, and consist of imbricated, oblong scales, each furnished with a roundish, ovate, nectariferous gland, and a glabrous germen, supporting a very short bifid style, terminated by four obtuse stigmas. The capsule is glabrous, ovate-oblong, ventricose at the base, nearly sessile, with one cell, opening at the summit with two valves reflexed outwards, containing a single seed, crowned with a white shining tuft. Plate 48, fig. 1, (*a*) male catkin; (*b*) single flower with its scale magnified; (*c*) female catkin; (*d*) pistil, magnified; (*e*) capsule, opening at maturity; (*f*) seed.

This species of Willow is frequent in moist woods, hedgerows, pastures, and by river sides, flowering in April and May.

The name of the genus is compounded of the Celtic words *sal*, *near*, *lis*, the *water*. It was called ιτεα in Greek, from ιεναι, *to be of quick growth*. It is supposed to be the ιτεα λευκη of Theophrastus. The Welsh name for Willow is *gwilou*.

The *Salices* are commonly divided into Willows, Osiers, and Sallows. We shall not attempt to characterize them, as the genus is very extensive and difficult. The species most valuable for medicinal use, are *S. Russelliana*, *alba*, *vitellina*, *caprea*, *pentandra*, *triandra*, *amygdalina*, and *purpurea* †.

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* Rarely a few female flowers are found at the base of the catkins.

† For the specific characters of these and the other indigenous species of Willow, consult "*Hooker's British Flora.*"

The Crack Willow, (*S. fragilis,*) has been mentioned by several medical writers, as valuable for its bark, but the Bedford Willow, (*S. Russelliana,*) which is undoubtedly much superior, has probably been mistaken for it.

It is, we imagine, from the drooping aspect of the *Weeping Willow*, that a branch or garland of the tree before us is considered emblematic of a hapless lover. Therefore it was peculiarly appropriate that the Queen in Hamlet should commence her description of Ophelia's death, by saying—

> " There is a Willow grows aslant the brook,
> That shows his hoar leaves in the glassy stream."

And that " therewith" the luckless girl should make " fantastic garlands."

General Uses.—The bark of this tree is useful in tanning. (That of *S. Russelliana* is said to be preferable to oak bark for such a purpose.) The wood is very white, tough, light and pliable, and is used for flooring, and for making chests, boxes, milk-pails, butter-firkins, and hoops for casks. It is also convertible into excellent charcoal, for gun-powder. The bark imparts a cinnamon colour to yarn. Horses, cows, sheep, and goats eat the leaves and young shoots, and the blossoms are eagerly sought after by bees.

Qualities.—The flowers or catkins, the leaves, and bark *, were formerly employed; but the latter only is now used. When recent it has a peculiar odour, and a bitter, astringent, balsamic taste; becoming inodorous and more styptic by keeping. Its virtues are extracted by water. The decoction is of a reddish colour, which is rendered black by sulphate of iron, and soon throws down a dark green precipitate. It also affords precipitates with solution of isinglass, the carbonates of ammonia and potass, and lime water. The watery extract is bitter, of a reddish colour, and brittle. This bark, digested in alcohol, affords a greenish yellow tincture, which is rendered turbid by water; and this, when evaporated, leaves a brilliant yellow extract, of a very bitter taste, melting at a moderate heat, and emitting an aromatic odour. Hence the constituents of Willow bark appear to be tannin, bitter resin, extractive, and gluten.

The medicinal energy of Willow bark, appears to be owing to a peculiar crystallizable principle, neither acid, nor alkaline, called *Salicin* or *Salicina*, by M. Leroux, who discovered it in the bark of *S. Helix.* It is obtained by adding subacetate of lead to a decoction of the bark, as long as a precipitate falls, filtering, boiling with chalk, filtering again, and evaporating the solution, when the *Salicin* crystallizes [*].

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* The bark is recommended to be procured in the latter part of spring or beginning of summer, from branches of two or three years' growth; to be carefully dried, preserved free from damp, and external air, and not to be reduced to powder until required for use.

MEDICINAL PROPERTIES AND USES.—Passing over the praises bestowed by the ancients [†] upon the Willow, for its good effects in diseases of the nerves, gout, hæmorrhages, obstructions of the liver, wounds, &c., we find it recommended in later times as a valuable remedy for intermittent fevers. The Rev. E. Stone [‡] relates, that he gave the powdered bark in two scruple doses, repeated every four hours between the paroxysms, in fifty cases of ague with complete success. In some rebellious autumnal and quartan agues, he added one-fifth part of Peruvian bark. Clossius [§], Gunz [||], and others have confirmed this statement. Coste and Willemet [¶] seldom found a decoction of the bark disappoint their expectations in intermittents, an emetic or purgative being premised. The tonic and astringent properties of this substance have also suggested its employment in alvine fluxes, pulmonary hæmorrhages, habitual vomiting, debility of stomach, dyspepsia, and in dropsical and worm cases; in phthisis, and hectic fever, it often agrees better than the cinchona bark.

Externally it has been applied either in powder or by fomentation to atonic, fungous, and gangrenous ulcers. Haller* recommends baths made of the decoction for strengthening the debilitated limbs of children.

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[*] See Magendie's Formulary, by Gregory, p. 204.

[†] Ettmuller (Opera ed. J. C. Westphali, p. 648.) has the following observations on the effects of this plant;—effects which no one in the present day will be disposed to credit. "Imo per salicem non saltem imminuitur appetitus mulierculalarum, sed se possunt illâ reddere omnino steriles jejuno ventriculo aliquoties potum (i. e. a strong decoction of the leaves). Sic contra furorem uterinum prodest." He also mentions, that the leaves are usefully added to foot baths for the purpose of inducing sleep. We should imagine the flowering catkins to be more likely to prove hypnotic, as they exhale a pleasant aromatic odour, which they yield to water like the blossoms of lime, meadow-sweet, &c.

[‡] In Philos. Transactions, 1763, vol. 53.

[§] Nov. Variol. Med. Meth. p. 128.

[||] De Cort. Salicis, cort. Peruv. subst. 1772.

[¶] Essays sur quelques Plantes indigènes, p. 56.—See also Murray, App. Med. tom. i. p. 68.

The dose of the pulverized bark is from half a drachm to a drachm, combined with cinchona, aromatics, or carbonate of iron, as the case may require. A strong decoction is however preferable.

DECOCTION OF WILLOW BARK.

Take of	Willow bark, bruised	two ounces;
	Water	two pints.

Boil down to one pint and strain. It may be rendered palatable by the addition of the tincture of Angelica, or any other aromatic tincture; or a few bruised cloves may be added just before the decoction is strained, and it may be sweetened with honey.

Dose.—A cupful thrice a day.

The aqueous extract may be given in the dose of fifteen to twenty grains. The dose of the active principle, *salicin*, is four or five grains thrice a day.

The other species of Willow before enumerated, possess analogous properties to the White Willow. One of the most common, *S. caprea*, whose handsome yellow blossoms decorate the hedges in early spring, is often called *Palm*, from its coming into flower about Palm-Sunday, and the catkins are named by the peasantry *Goslings*. The *S. purpurea* deserves trial on account of its intense bitterness. Experiments, indeed, should be made in order to determine the comparative value of the different kinds of Willow †, as the ravages made upon the Cinchonæ, may render a substitute for quinine of the utmost consequence.

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* Hist. St. Helv. n. 1635.

† Such experiments have in part been made by Dr. Loffler. (See *Richter's Chirurg. Library*, vol. vii. p. 789.)

CLXXXIX.

ASPERULA ODORATA.

Sweet Woodruff.

Class IV. Tetrandria.—*Order* I. Monogynia.

Nat. Ord. Rubiaceæ.

Gen. Char. *Corolla* funnel-shaped, four-cleft. *Fruit* didymous, not crowned by the calyx.

Spec. Char. Leaves about eight in a whorl, lanceolate. Corymbs terminal, on long peduncles.

SYNONYMES.

Latin	Asperula, seu Rubeola montana odorata. *Bauh. Pin.* 334. Asperula. *Raii Hist.* 483; *Syn.* 224. *Ger. Em.* 1124. Asperula, aut Aspergula odorata. *Park. Theatr.* 563. Asperula odorata, flore albo. *Dod. Pempt.* 352. Aparine latifolia humilior montana. *Tourn. Paris*, 389. Matrisylva. *Trag.* 496. Galium odoratum. *Scop. Carn.* n. 158. Asperula odorata. *Lin. Sp. Pl.* 150. *Eng. Fl.* i. p. 196. *Eng. Bot.* t. 755. *Œd. Fl. Dan.* t. 562.
French	Asperule odorante; Hepatique etoilée; Petit muguet.
Italian	Asperula odorata.
Spanish	Asperula olorosa.
Port	Asperula odorosa.
German	Waldmeister; Sternleberkraut.
Dutch	Welriekend rawkruid.

Description.—The root is perennial, creeping a little below the surface of the soil, and furnished at the joints with several small descending fibres. The stems are numerous, erect, simple, herbaceous, smooth, tetragonal, leafy, green above, purplish brown towards the base, and about six inches in height. The leaves are from seven to nine in a whorl, usually eight, bright green, lanceolate, acute, rough only at the margin, and on the midrib; the lower ones smaller, obovate-lanceolate, commonly seven in a whorl. The flowers are disposed in a terminal, erect, naked corymb, which is generally composed of three principal branches, and four secondary ones. The calyx is a small superior margin upon the germen, with an obsoletely four-toothed limb. The corolla is snow-white, funnel-shaped, with a very short tube and a four-parted limb, the segments ovate-lanceolate, obtuse, spreading*. The stamens are four, with short white filaments, and oblong, obtuse, erect anthers, situated between the segments of the corolla. The germen is inferior, roundish, obsoletely didymous, supporting two filiform styles, united above the middle, terminated by globose stigmas. The fruit is rough with ascending bristles, not crowned by the calyx, separable into two carpels, each of which is dry, indehiscent, and contains a single seed. Plate 47, fig. 4, (*a*) corolla opened to show the stamens, (*b*) pistil, (*c*) fruit.

The pure snow-white blossoms of this plant appear in their greatest profusion in May, peeping up among the dead leaves in woods and shady places. It seems to prefer a calcareous soil, and is very abundant in the beech woods of Bucks and Herts.

The generic name is derived from *asper, rough*, in allusion to the rough leaves of some of the species. The common name *Woodruff*, corrupted into *Woodroof* and *Woodrooffe*†, refers to the whorled position of the leaves, like an old fashioned ruff; also compared to the rowel of a spur, whence the names *Woodrowel* and *Woodrow*.

The only British species of the genus, besides that here described is the Squinancy Woodruff (*A. cynanchica*), distinguished by its linear leaves, four in a whorl, the upper whorls of two opposite leaves reduced to bracteæ. It was so named because of its reputed efficacy as a gargle in sore throat and quinsy.

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* The corolla under a slight magnifying power, appears covered with shining frosted particles having a beautiful appearance.

† Another orthography, which affords amusement to children learning to spell, is *Wooddérowffe*.

Qualities and general Uses.—The plant is eaten by cows, horses, goats, and sheep, and is said to increase the milk of those animals, especially of the first mentioned. The dried herb is recommended as one of the best substitutes for foreign tea. Infused in wine or beer it imparts an agreeable flavour to those liquors; and may be kept among clothes like lavender, as a perfume, and to preserve them from insects.

It is remarkable that the fresh plant is almost destitute of odour, but when dried it exhales a delightful and lasting fragrance, which has been compared to the odour of Vernal grass, or Melilot, approaching to that of peach-blossoms. It has an astringent and sub-saline taste, which it imparts both to water and spirit. The saturated watery infusion has a pale reddish colour, and a pleasant "ambrosial"[*] taste; and is rendered black by sulphate of iron. The spirituous tincture has a pleasant flavour, reddish colour, and is also blackened by sulphate of iron. The odorous principle is said to be owing to the presence of benzoic acid.

Medicinal Properties and Uses.—The properties attributed to this plant by the old writers are those of a diuretic, deobstruent, and vulnerary. It has been highly commended in obstructions of the liver[†], biliary ducts and mesenteric glands, in jaundice[‡], and even in paralysis, epilepsy, and hydrophobia[§]. Its efficacy in the last mentioned disease, is doubtless quite hypothetical and imaginary. In the character of a diuretic, however, it appears to be deserving of attention, as it certainly acts upon the kidneys and promotes diaphoresis; and in slight nephritic and calculous complaints, and dropsical cases, it has proved serviceable.

In exanthemata and some cutaneous affections it may also be used with advantage. Simon Pauli[||] speaks favourably of the effects of a strong decoction of the plant, applied externally as a lotion to scabies.

The fresh and bruised herb is applied by the country people to inflammatory swellings and to wounds, but with what success we are unable to determine.

A strong infusion or decoction of the dried plant may be taken in doses of a cupful, three or four times a day. The spirituous tincture is certainly excitant, but we can scarcely credit its efficacy in paralysis as mentioned by some authors.

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[*] Bergius.

[†] Hence the names *Hepatique*, *Fr.*; and *Lebenkraut*, *Ger.*

[‡] Geoffroy, Mat. Med. tom. iii. p. 141.

[§] Vide Murray, App. Med tom. i. p. 541.

[||] Quadrip. p. 28.

CXC.

OXALIS ACETOSELLA.

Common Wood-Sorrel.

Class X. Decandria.—*Order* IV. Pentagynia.

Nat. Ord. Oxalideæ.

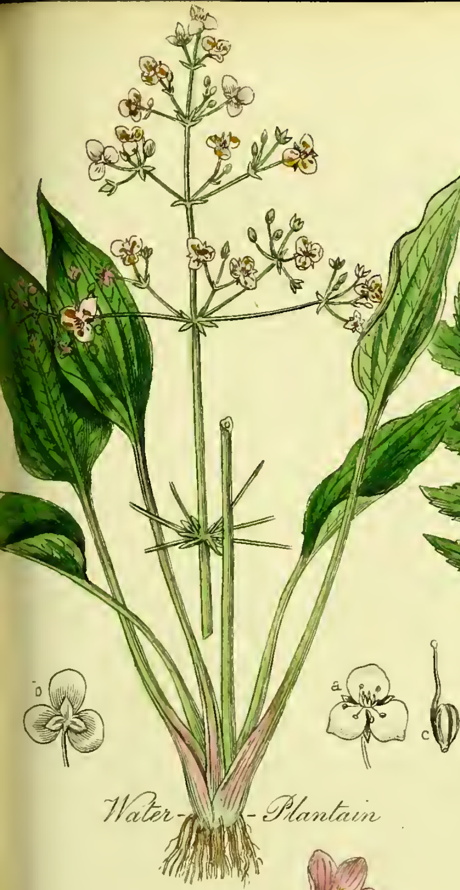
Gen. Char. *Calyx* five-parted. *Petals* five, often united by the base of their claws. *Filaments* usually combined below,—the five outer ones shorter. *Capsule* angular, five-celled; cells two or many-seeded. *Seeds* with an elastic arillus.

Spec. Char. Leaves all radical, ternate; leaflets obcordate, hairy. Scape one-flowered. Root scaly.

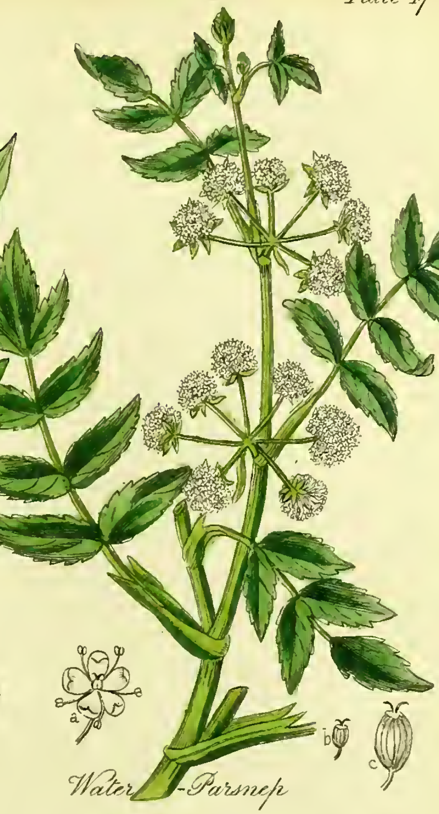
SYNONYMES.

Latin	Trifolium acetosum vulgare. *Bauh. Pin.* 330. *Park. Theatr.* 746. *Raii Hist.* 1098; *Syn.* 225. Oxys alba. *Ger. Em.* 1201. Oxys sive Alleluya. *Fuch. Hist.* 544, c. 216. Oxys pliniana. *Lob. ic.* ii. 22. Oxys acetosella. *Hall. Helv.* n. 928. Oxalis acetosella. *Lin. Sp. Pl.* 620. *Eng. Fl.* ii. p. 323. *Eng. Bot.* t. 762.
French	Oxalide; Surelle; Alleluia. Pain de coucou.
Italian	Acetosa salvatica; Alleluja.
Spanish ...	Acedera silvestre; Acederilla; Aleluya; Oxalis silvestre.
Port.	Trevo azedo; Azedinha.
German ..	Sauerklee; Buchampfer; Kuckukslee.
Dutch	Zuurklaver; Klaver-zuuring; Koekkoeks-brood.
Danish	Skovsyrer; Suurklover; Giogeurt.
Swedish ..	Harsyra.
Polish	Szczowik.
Russ.	Saitschaitschawel.

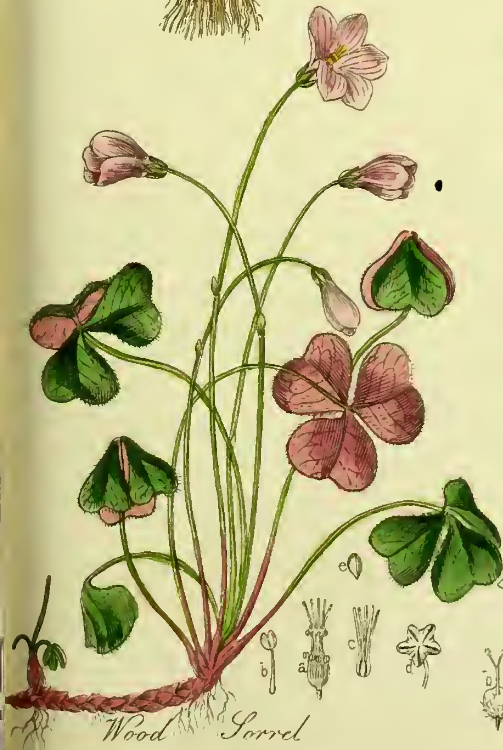
Description.—The rhizome is horizontal, creeping, somewhat jointed, consisting of several alternate, fleshy, ovate-gib-



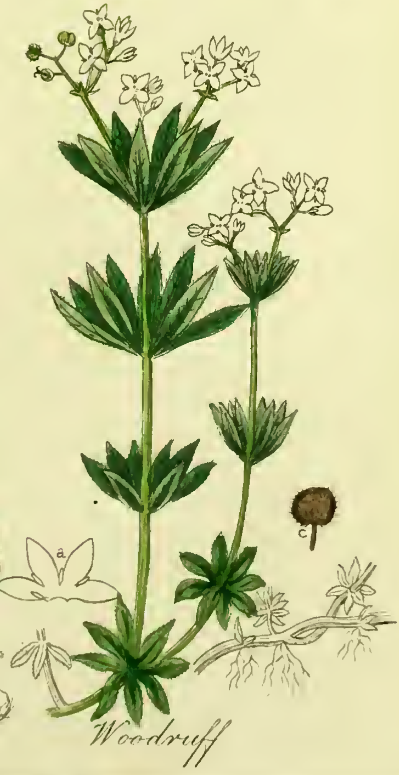
Water-Plantain



Water-Parsnep



Wood Sorrel



Woodruff

bous red scales, attached to a filiform axis, from which descend at short distances the slender radicles or fibres. The leaves all proceed from the neck of the root on long, reddish, slender, naked, slightly pubescent petioles *; from three to four inches in height. The lamina of each leaf is composed of three obcordate, entire leaflets of a bright yellowish green colour, often purplish beneath, slightly hairy, spreading, drooping at night. The scapes are rather longer than the leaves, among which they spring; the peduncle is pubescent, erect, furnished above the middle with two small, ovate, scaly bracteæ; the flower is solitary, delicate, somewhat drooping. The calyx is divided into four, short, ovate-oblong sepals, rather membranous and ciliate at the margin and often tinged with purple. The five petals † are ovate-cuneiform, retuse, white or pale flesh colour, elegantly striated with purplish veins, attached to the receptacle by small yellowish claws. The stamens are ten with subulate, white, erect filaments, the five outer much shorter than the rest, tipped with roundish, sub-trigonal, innate, two-celled, yellow anthers. The germen is superior, roundish, angular, supporting five filiform erect styles a little longer than the inner stamens, terminated by capitate stigmata. The fruit is a membranous spotted capsule, with five angles and five cells opening by five valves; each cell containing two (or three) seeds attached to the axis ‡. The seeds are cordate, convex, longitudinally striated, of a bright reddish brown colour, each covered with a shining white tegument resembling an arillus, which is at first closed, but at maturity rolls back from the apex elastically and ejects the seed with considerable force. Plate 47, fig. 3, (*a*) stamens and pistils; (*b*) stamen magnified; (*c*) styles, separate; (*d*) capsule; (*e*) seed.

This very elegant plant is a native of Europe in woods, shady places, and alpine rocks, as far north as Lapland. It is very abundant in England, particularly in the beech woods,

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[*] The petioles are commonly cylindrical at the lower part, but grooved on one side towards the summit.

[†] The petals are connected towards the base by small fleshy excrescences, but the claws are distinct.

[‡] As in the violet, the seeds of this plant are continually produced throughout the summer, without any appearance of blossom.

where it begins to flower the first week in April, and continues till May, when it is immediately succeeded by its associate, the *Woodruff*. In shady places or alpine mountains it remains in flower until August.

The generic name is derived from *οξυς*, *sharp* or *acid;* and the specific name has a similar origin. The plant before us is probably the *oxys* of Pliny, which, he says, "*folia terna habet.*" When natural history with almost every other science was confined to cloisters, the monks gave this plant the name of *Alleluia*, from its being in flower about Paschal week, when Alleluia was accustomed to be sung in churches. Another synonyme, *Lujula*, is either corrupted from the preceding, or from the Calabrian name of the plant, *Juliola*. Its provincial and ancient English names are, *Sour Trefoil*, *Wood-sour*, *Stub-wort*, and *Cuckoo's meat;*—the latter was given it because it flowers with the singing of the cuckoo. It has recently been asserted that the Wood Sorrel and not the White Clover is the *Shamrock* of the Irish.

Oxalis is a curious beautiful and extensive genus, containing upwards of 200 species, most of which are natives of South America or of the Cape of Good Hope. Two only are indigenous to Britain; the one above described, and the *O. corniculata*, an annual plant, with a branched procumbent stem, two-flowered peduncles, and stipulæ united to the base of the footstalks.

The foliage of Wood-Sorrel is eaten by goats, sheep, and swine; it is disliked by cows, and totally refused by horses. The leaves form a more elegant salad than those of Common Sorrel.

Qualities.—This plant is quite inodorous, but has an agreeable penetrating acid taste, resembling that of lemons or tartaric acid. The expressed juice reddens litmus paper, coagulates milk and instantly precipitates lime from its solutions. Its sensible qualities are owing to oxalic acid which is combined with potass, in the state of binoxalate of potass. This salt is obtained from the juice by crystallization, and is known in the shops by the name of "*essential salt of lemons*,"* commonly used for taking ink-stains or iron-mould out of linen. It crystallizes in small white opaque rhomboids *.

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* This, however, as generally sold, is one half or more cream of tartar, or sulphate of potass supersaturated with sulphuric acid.

Medicinal Properties and Uses.—Wood-Sorrel is refrigerant, attenuating, and antiseptic. It appeases thirst, diminishes febrile heat, and favours the secretion of urine; hence it is given with advantage in putrid, inflammatory, and bilious fevers. Francus †, who employed it against a petechial malignant fever, states that he found it restore the appetite, allay vomiting, constringe the bowels, allay thirst, and disperse the bitterness of mouth and sore-throat. It has also been recommended in diarrhœas and bilious dysenteries, and especially in acute inflammatory states of the kidneys, bladder, and urethral canal, and obstructions of the urinary passages in general. It is, moreover, equally useful with the Common Sorrel in scorbutic affections, in which it may be at the same time eaten as a salad. After having been eaten for several days, according to Rosenstein ‡, it gently relaxes the bowels.

Externally, the herb wrapped in a cabbage leaf and macerated in warm ashes until reduced to a pulp, has been successfully applied to scrofulous ulcers. This poultice should remain on the sore for twenty-four hours, and be repeated four times. Afterwards the ulcer is to be dressed with a poultice made of the roots of Meadow-sweet, bruised and mixed up with the scum of sour butter-milk §. The juice with the addition of a little alum is said to be a useful application to erysipelas and other inflammations, in their incipient stage.

An infusion of the leaves is a pleasant drink in ardent fevers; the addition of a little nitre will increase its refrigerating and diuretic effects. The herb boiled in milk forms an agreeable

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* It is thus obtained:—The expressed juice, after being allowed to subside, is slightly inspissated by a very gentle heat, and is then clarified by adding to it water in which a small portion of fine clay is suspended. This clarified juice is next boiled till a pellicle forms on its surface, and is then put aside for a month in a cool place to crystallize; the operation being repeated till the whole of the salt is obtained. As the first crystals are usually coated with mucilage, they are dissolved in water and re-crystallized until pure.

† De Acetosella ejusdemque virtute contra febres malignas petechiales, et ipsam pestem. *Aug. Vindel.* 1717.

‡ Hus-och Rese-Apot. p. 92.

§ Beddoes on Fact. Airs.

whey. A table-spoonful of the expressed juice * is useful in allaying nervous palpitation of the heart. A very agreeable conserve is made by beating up the fresh leaves with twice their weight of loaf sugar in a marble mortar. A syrup and an extract have also a place in some foreign pharmacopœias. The crystallized salt or binoxalate of potass, dissolved in water with a little sugar, forms a pleasant drink resembling lemonade.

The root is not now employed, but from its pleasant astringency, we should consider it a useful adjunct to the preparations of the herb, especially in diarrhœa, and for external uses. It imparts a beautiful red colour to the preparations into which it enters.

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* To obtain the juice, the recent plant should be bruised in a marble mortar, then expressed, allowed to settle, and should then be poured off into a bottle with a small quantity of spirit, well corked, and kept in a cool place.

CXCI.

ARTEMISIA ABSINTHIUM.

Common Wormwood.

Class, &c. See Mugwort (*Artemisia vulgaris*).

Spec. Char. Leaves bipinnatified, clothed with short silky down; segments lanceolate. Flowers hemispherical, drooping. Receptacle hairy.

SYNONYMES.

Greek	*αψινθιον.*
Latin.	Absinthium ponticum, seu romanum officinarum, seu Dioscoridis. *Bauh. Pin.* 138. Absinthium latifolium, sive ponticum. *Ger. Em.* 1096. *Dod. Pempt.* 23. Absinthium vulgare. *Raii Syn.* 188. *Park. Theatr.* 98. *Lob. Obs.* 433. *Fuch. Hist.* 1. c. 1. Artemisia Absinthium. *Lin. Sp. Pl.* 1188. *Eng. Fl.* iii. p. 408. *Eng. Bot.* t. 1230.
French	Absinthe; Absinthe commune; Grand Absinthe; Aluyne.
Italian . ..	Assenzio.
Spanish ..	Axenjo.
Port.	Losna.
German ..	Wermuth.
Dutch	Alsem; Groot Alsem.
Danish....	Malurt.
Swedish ...	Malœrt.
Polish	Poilun.
Russ.	Polin.

Description.—The root is perennial, rather thick, yellowish, ligneous, branched and fibrous. The stem is erect, firm, angular, striated, villous, pale green, branched, leafy, and rises from one to two feet in height; the branches are axillary, leafy, and floriferous. The leaves are alternate, petiolate, doubly and irregularly pinnatifid, (the lowermost nearly bipinnate,) with lanceolate, entire segments, and are clothed with short silky down. The flowers are collected into leafy erect panicles; the leaves or bracteæ three-lobed, the uppermost entire and linear-lanceolate; each flower pedicellate, hemispherical, drooping, of a brownish yellow colour, subtended by a linear-subulate bractea. The involucre consists of several imbricated scales, of which the exterior are very small and subulate, the inner ovate and scarious. The florets of the disk are numerous, hermaphrodite, tubular, five-cleft at the margin, with five short stamens and two large recurved styles tipped with bifid stigmas; those of the ray few, short, ovate, subulate, and including only an exserted bifid style. The fruit consists of small naked obovate achenia, seated on a convex villous receptacle. Plate 48, fig. 3, (*a*) receptacle magnified, with two scales and one floret remaining; (*b*) floret of the disk; (*c*) floret of the ray; (*d*) achenium.

This plant is not uncommon in waste places *, and near villages, especially in a dry chalky or gravelly soil, flowering in August.

The specific name *Absinthium* is derived from αψινθιον, and that from α, *without*, ψινθος *delight*, probably in allusion to its very bitter taste. *Wormwood* seems to be an alteration of *Wormwort*, referring to its property of expelling worms.

General Uses.—According to the Swedish experiments, Wormwood is eaten by cows, horses and sheep, but is disliked by goats, and refused by swine. It is said to impart a bitter taste to the flesh and milk of animals that feed upon it. Its scent is reported to drive away fleas and other insects. The plant is cultivated † in large quantities for the seed, which is sold to the rectifiers of British gin; and it is sometimes used by the distillers of great-still whiskey in Scotland, instead of hops. The liquor sold by publicans under the name of *purl*, is said to be ale flavoured with the tops of wormwood. The herb infused in beer preserves it from acescency and is supposed to render it more intoxicating; it is also used to prevent acescency in wines.

Qualities.—The odour of Common Wormwood is strong, aromatic, but to many persons very disagreeable; the taste is intensely bitter, persistent, slightly pungent and nauseous. The flowers are less bitter and nauseous than the leaves; the root is warm, aromatic, and much less bitter than the other parts of the plant. These properties are imparted both to water and to alcohol; and by distillation with water, a dark green volatile oil is obtained, on which its odour depends. The aqueous infusion has the odour and taste of the leaves; and a pale olive colour, which reddens turnsol, and becomes of a greenish black on the addition of sulphate of iron and zinc, and slowly precipitates. The chief constituents appear to be bitter extractive, resin, mucilage, volatile oil, and salts of potash. The volatile oil is dissipated by long-continued decoction, but the bitter principle is not affected.

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* "Tristia deformes pariunt absinthia campi."—*Ovid.*

† The wild plant is preferable for medical uses. It should be gathered just before flowering, and dried quickly in the shade.

With regard to the physiological effects of Wormwood, it has been asserted that the milk of a puerperal woman, from the continued use of the extract, became as bitter as gall, and proved injurious to the infant *.

Medicinal Properties and Uses.—Wormwood is esteemed as a tonic, febrifuge, and anthelmintic, and externally discutient and antiseptic. It has been used in intermittents † combined with some aromatic, the primæ viæ being first cleared by purgatives. In hypochondriasis, jaundice, dropsy, gout, calculus, scurvy, and worm cases ‡ it is frequently efficacious. It has in general a very beneficial effect on the digestive organs, strengthening the stomach, promoting appetite, and cleansing the intestinal canal from that slimy mucus which obstructs its functions and forms a nidus for worms. It is also an approved remedy in hysteria, and has been esteemed by some emmenagogue. It should not be employed when there is fever, inflammation, or great determination of blood to the head; nevertheless there is no evidence of its proving hurtful in epilepsy and apoplexy, or of its injuring the eyes, as asserted by some of the ancients. Dioscorides §, who commends it in several of the above mentioned diseases, also affirms that it is a preventive of intoxication and an antidote against its ill effects; indeed the "*poculum absinthiatum*" has long been a favourite beverage.

Externally, infusion of Wormwood is a useful fomentation for inflammatory pains, tumours, and gangrene; and combined with chamomile flowers and bay leaves it forms the anodyne *fotus communis* of the old pharmacopœia. The recent herb is said to have been applied with good effect to œdematous swellings ||.

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* Borrich. in Act. Hafn. vol. ii. p. 165.

† Comm. Nor. 1734. p. 225.

‡ See the authorities quoted by Murray (App. Med. tom. i. p. 182).

§ Mat. Med. lib. iii. c. 26.

|| Löseke, M. M. p. 151.

The infusion, with a few drops of the essential oil of the plant, is reputed to be useful in preventing the hair from falling off.

The dose of the powdered herb is from one to two scruples: the infusion made by macerating three drachms in six ounces of water may be taken at three or four doses in the course of the day. It may also be infused in beer or wine, or macerated in spirit. When the simple bitter, without the narcotic properties of the oil, is required, the decoction or extract, as ordered by the Dublin College, is the best form. The dose of the extract is from ten to twenty grains, and it may be given in pills. The conserve made with the fresh leaves or flowers retains all their virtues. The essential oil in the dose of a few drops is a reputed sedative for spasmodic pains and for allaying vomiting*.

The salt obtained by lixiviating and evaporating the ashes of the plant,—formerly much used and highly celebrated, by the name of "Salt of Wormwood," is merely carbonate of potash. It was much praised as a resolvent, antacid and diuretic. A scruple of this salt dissolved in water with a little sugar, poured upon a spoonful of lemon-juice, constituted the famous "*saline draught*" used for allaying vomiting, diminishing febrile heat, and quieting nervous irritability. Salt of tartar (carbonate of potash) is now usually substituted for salt of wormwood, but the latter is said to agree better with some stomachs.

The root of Wormwood seems to be undeservedly neglected in this country; it is much commended in Germany for the cure of epilepsy. It is powdered only when wanted for use, and is given in the dose of a drachm in hot beer an hour before the paroxysm is expected. The sensible effect is profuse sweating†.

* Fr. Hoffmann. Opusc. Phys. Chem. p. 355.

† Hufeland's Journal. 1824.

CXCII.

ACHILLEA MILLEFOLIUM.

Common Yarrow, or Milfoil.

Class XIX. Syngenesia.—*Order* II. Polygamia Superflua.

Nat. Ord. Compositæ.

Gen. Char. *Involucre* ovate, imbricated. *Receptacle* plane, chaffy. *Florets* of the ray five to ten, roundish, obcordate. *Pappus* none.

Spec. Char. Leaves bipinnate, slightly hairy; segments linear, toothed, acute. Stems furrowed.

SYNONYMES.

Greek	μυϱιοφυλλον.
Latin......	Millefolium vulgare album. *Bauh. Pin.* 140. Millefolium terrestre vulgare. *Ger. Em.* 1072. Millefolium vulgare. *Raii Syn.* 183. *Trag.* 477. Millefolium, sive Achillea. *Dod. Pempt.* 100. Stratiotes Millefolia. *Fuch. Hist.* 689. c. 278. Achillea Millefolium. *Lin. Sp. Pl.* 1267. *Eng. Fl.* iii. 462. *Eng. Bot.* t. 758.
French....	Millefeuille; Millefeuille commune; Herbe aux charpentiers.
Italian	Millefoglie.
Spanish ...	Milenrama.
Port.	Milfolha.
German. ..	Schafgarbe.
Dutch.....	Duizenblad; Haaze-gerwe; Geruwe.
Danish....	Rœllike; Jordhumble.
Swedish ..	Roellika.
Polish.....	Tysiacznik ziele.

Description. The root is perennial, creeping, cylindrical, with a few slender, white or pinkish subterranean shoots, and several descending fibres. The stem is erect, simple, and smooth below, but towards the summit striated, woolly, and somewhat branched, tinged with reddish purple, and about a foot in height. The leaves are sessile, alternate, elongated, semi-amplexicaul, bipinnate; pinnæ numerous, opposite, with the segments deeply lobed, often trifid, acute, hairy beneath; the radical leaves are the longest, and have membranous, short, rather sheathing petioles. The flowers form a terminal, fastigiate, paniculate corymb, with oblong, pubescent, pinnatifid bracteæ at the base of the peduncles. The involucre is ovate, downy, of several imbricated, ovate, concave, downy scales, membranous and brownish at the margin. The florets of the disk are about twelve, small, hermaphrodite, with a yellowish tube, and a limb of five short revolute segments: the florets of the ray are seven to ten in number, ligulate, white *, spreading, roundish, retuse, obtusely three-toothed, and contain only a pistil, which is rather longer than the tube. The filaments are five, short and slender; the anthers yellow, connected. The germen is oblong, somewhat compressed, glabrous, supporting a capillary style, and a bifid, reflexed stigma. The fruit or achenium is linear-cuneiform, brownish white, somewhat toothed at the summit, and is seated on a flat, chaffy receptacle. Plate 48, fig. 4, (*a*) entire flower, somewhat magnified; (*b*) floret of the ray magnified; (*c*) floret of the disk magnified.

This plant is very common in pastures and by way-sides, flowering from June to September.

The genus derives its name from the warrior Achilles, who is said to have discovered its virtues. One of the common names, *Milfoil*, is a corruption of the Latin *Millefolium*, referring to the much-divided leaves. It is sometimes called *Nose-bleed*, as the leaves introduced up the nose, by means of their short hairs act as a mechanical irritant and cause it to bleed, thus affording relief to the *megrim*, as Gerard informs us.

There are three other species of Achillea indigenous to Britain, but rather local, except the *A. Ptarmica*, which has linear-lanceolate, acuminate, sharply serrated leaves, and is not uncommon in moist meadows. The Common Yarrow is

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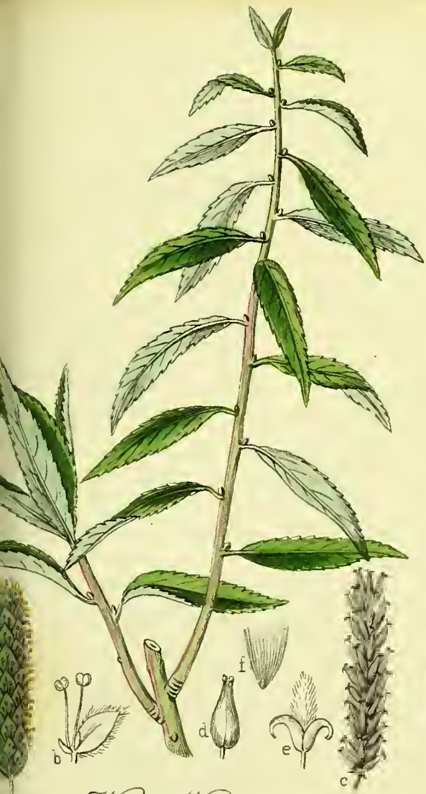
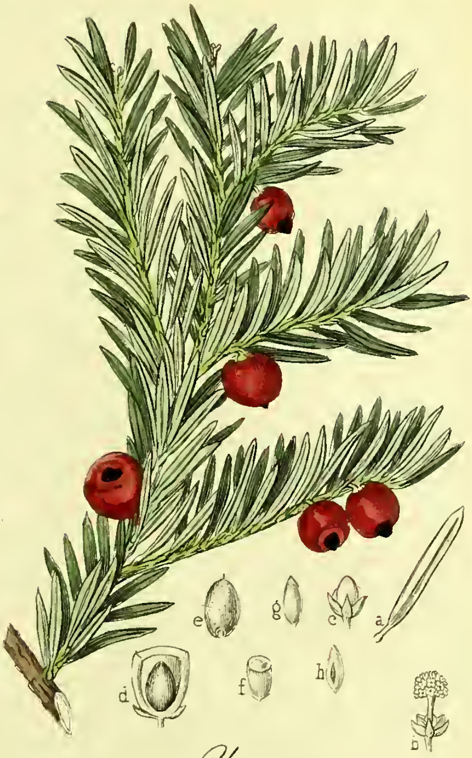
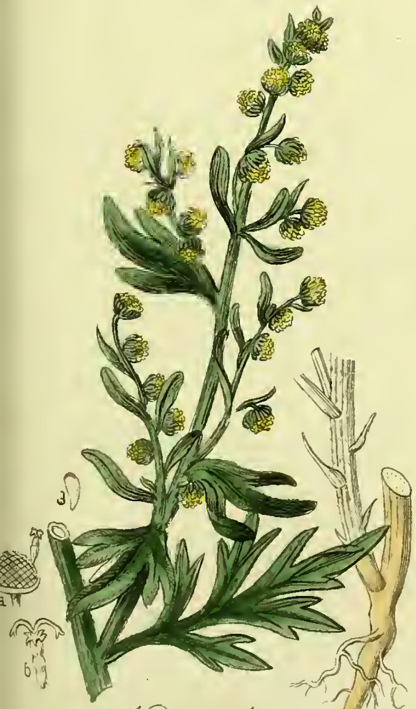
* The corollæ are sometimes pale purple or rose-coloured.



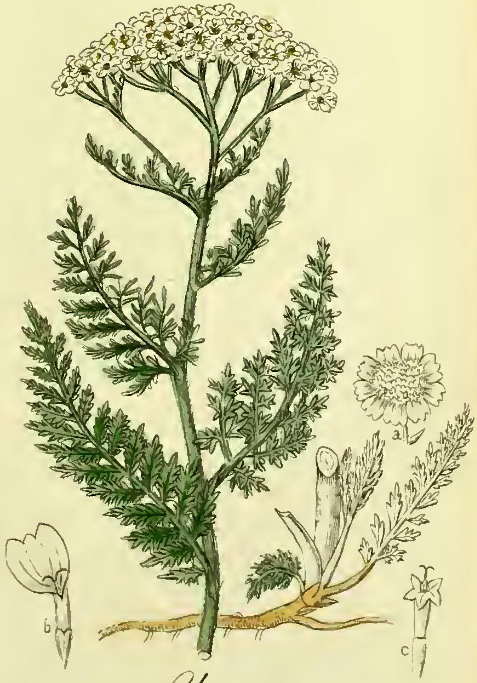
White Willow



Yew



Wormwood



Yarrow

immediately distinguished from either of them, by its very compound leaves.

General Uses.—Linnæus [*] observes, that the Dalecarnians are accustomed to infuse the leaves and flowers of this plant in beer, while in a state of fermentation, with a view to increase its intoxicating effects. It is also said to be used for this purpose in some parts of Africa. Batsch employed it in tanning. It is eaten by sheep and swine, but is not relished by horses, cows, or goats.

Qualities.—The leaves have a weak fragrant smell, and a bitterish, astringent taste. The flowers, rubbed between the fingers, have a stronger, more aromatic odour, and a bitterish, warm, somewhat pungent taste. The subterranean shoots of the root have also a pungent, rather pleasant flavour. The watery infusion of the flowering tops has a yellowish colour, which is blackened by sulphate of iron. The flowers yield by distillation an essential oil, on which their odour depends. This oil resembles that of chamomile, and is of a blueish, green, or yellowish colour, according to the soil in which the plant grows [†]. The watery extract is simply bitter and austere; while the spirituous extract has a warm, penetrating, aromatic, camphor-like odour, and very little bitterness or astringency.

Medicinal Properties and Uses.—This plant is considered by some so be the *Στρατιωτης χιλιοφυλλον* of the Greek writers; much commended by them as a styptic and vulnerary, and as an astringent in hæmorrhagic complaints. They ascribed its discovery to Achilles, and pretended that by means of it he healed the wounds of his companions in arms. In later times, its reputation as a styptic and astringent has been revived by Stahl [‡], Hoffmann [§], Buchwald [||], and Chomel [¶], who severally recommend it in hæmorrhages from the stomach, lungs, and uterus, and in dysentery. Moreover, in consequence of its volatile principle, it has been lauded in colic, cardialgia, flatulence, epilepsy, hypochondriasis, fluor albus [**], &c. It has also been called diuretic and anti-rheumatic. Hoffmann states that a calculous affection was completely relieved by it; and, according to Gunner, it is much relied upon in Norway for the cure of rheumatism, and Ettmuller commends it in seminal weakness and gonorrhœa.

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[*] Flora Suecica, p. 299.

[†] Lewis, Mat. Med. p. 424.

[‡] De Specif. p. 33.

[§] Diss. de Millefolio rep. in Opusc. med. p. 341.

[||] Specimen Med. Pract. p. 179.

[¶] Usuelles, tom. ii. p. 278.

[**] Vide Murray, App. Med. i. p. 253.

Externally, a strong decoction of the leaves has been sometimes used to stop bleeding at the nose, as an application to hæmorrhoids, and as an injection in leucorrhœa. The flowering tops, boiled in water, also form a useful anodyne fomentation, with or without chamomile. The bruised herb, or an ointment made of it, is sometimes applied by the peasantry to fresh cuts, bruises, &c.

The *aqueous* decoction or extract is tonic, and may be advantageously used to strengthen the tone of the stomach and promote appetite, especially in hypochondriacal subjects; it is also suitable for diarrhœas and passive hæmorrhages. The spirituous extract of the flowering tops appears to be antispasmodic and slightly narcotic, but its virtues are not fully ascertained.

TINCTURE OF YARROW.

Take of Flowers of Yarrow	3 ounces.
Alcohol	16 ounces.

Digest for three days, strain off with pressure, and pour the liquid upon

Flowers of Yarrow	2 ounces.

After sufficient digestion, strain again, and filter.

Recommended in hysteria, nephritic pains, and rheumatism. Dose, 50 or 60 drops.

The volatile oil is reputed to be very similar in its properties to that of chamomile. The distilled water may be considered as a useful vehicle for other medicines.

CXCIII.

TAXUS BACCATA.

Common Yew.

Class XXII. Diœcia.—*Order* VIII. Monadelphia.

Nat. Ord. Coniferæ.

Gen. Char. Male flowers: *Perianth* single at the base. *Stamens* numerous; *anthers* peltate, six to eight-celled; *cells* opening beneath. Female flowers: *Perianth* single, urceolate, scaly. *Style* none. *Drupe* fleshy, open at the extremity.

Spec. Char. Leaves two-ranked, crowded, linear, acute. Flowers axillary, sessile.

SYNONYMES.

Greek......	*σμιλαξ. Dioscoridis?*
Latin.	Taxus. *Bauh. Pin.* 505. *Raii Hist.* ii. 1416; *Syn.* 445. *Ger. Em.* 1370. *Park. Theatr.* 1412. *Dod. Pempt.* 847. *Cam. Epit.* 840. Taxus baccata. *Lin. Sp. Pl.* 916. *Eng. Fl.* iv. p. 253. *Eng. Bot.* t. 746. *Roth. Germ.* i. 426.
French. ..	If.
Italian	Tasso; Nasso.
Spanish...	Texo; Texon; Tejo.
Portuguese.	Teixo.
German. ..	Eibe; Eibenbaum; Tax; Taxbaum.
Dutch	Taxisboom; Ibenboom.
Danish....	Tœxstræ; Barlind.
Swedish. ..	Id; Barrling.
Polish	Cis.
Russ	Tis.

Description.—The Yew is rather a low tree, seldom exceeding thirty feet in height, but, when old, with a very thick trunk, covered with a rough, cracked, dark brown bark, which easily peels off; the branches are very numerous, and spread nearly horizontally. The leaves are persistent, deep green, linear, acute, very entire, crowded, arranged in two opposite rows. The flowers are diœcious, small, nearly sessile and axillary. The male flowers have a perianth of six to eight scales*, and a cylindrical column which supports several stamens, with the anthers disposed circularly in the form of a buckler and opening beneath: the female flowers are solitary and naked, each with an urceolate scaly perianth, and a germen pierced at the apex with a small orifice which answers to the stigma. The fruit is an ovate-globose drupe, when ripe of a bright red colour, subtended by the outer permanent scales or bracteæ; the succulent covering composed of the enlarged perianth almost enveloping the nut, which is obovate-oblong, compressed, pointed, tawny, with a thin, hard, brittle shell and a white mealy nucleus or kernel; the embryo central straight. Plate 48, fig. 2, (*a*) leaf, natural size; (*b*) male flower; (*c*) female flower; (*d*) vertical section of the drupe showing the nut; (*e*) nut, slightly magnified; (*f*) horizontal section of the seed; (*g*) kernel; (*h*) longitudinal section of the same to show the embryo.

Yew is indigenous to the mountainous woods of Cumberland, Westmorland, Herefordshire, &c.; it is also found in the southern parts of England. It flowers in March.

Taxus the name of this tree, and τοξος an *arrow*, have probably the same origin, τοξικα (q. *taxica*) being with the ancients a common appellation for poisons; and it is possible that arrows in the old time were poisoned with the juice of Yew. According to Matthiolus† this tree is the σμιλαξ of Dioscorides, the μιλος of Theophrastus‡, and the σμιλος of Nicander. The common name *Yew* is a corruption of the Celtic word *iw*, *green*.

General Uses, &c. The Yew-tree is mentioned by Cæsar as very common in Gaul and Germany. It was planted by our ancestors in churchyards, because of its value in the manufacture of bows, according to some, but, as Ray more correctly observes, it was there stationed as a symbol of immortality; and from its sombre aspect it is well suited to tell "of graves, and worms, and epitaphs." A custom still exists, it is said, in some parts of Wales and Ireland, of carrying twigs of this and other evergreens at funerals and throwing them into the grave with the corpse. The bow being so important an engine of warfare in early days, and the Yew being generally allowed to furnish the best wood for that purpose, was highly valued, and various laws were enacted respecting it from the time of Edward IV. to that of Elizabeth. By a statute of the fifth year of Edward the Third, every Englishman was directed to have a bow of his own height, and the supply in this country being far too scanty, Yew was largely imported from abroad. Every ship trading with Venice was obliged to bring home ten bow-staves with every butt of malmsey.

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* These are named *bracteæ* by some botanists.

† Comment. in Dioscor. p. 774.

‡ Hist. lib. iii. c. 10.

The Yew is exceedingly long-lived, and often attains a prodigious magnitude. The Crowhurst Yew near Hastings is thirty feet in circumference. The noble Yew in Fortingal churchyard, at the entrance to Glen Lyon, measured according to Pennant fifty-six feet and a half in circumference; it still remains, though reduced to a mere shell. In Cliefden woods there are still more extraordinary remains of this tree; and one called the Hedsor Yew is said to measure twenty-seven feet in diameter.

The Yew is very patient of the shears, and when the ancient style of horticulture was in vogue, it was clipped into all sorts of shapes and forms. When allowed to take its natural shape, it is one of the handsomest of the British evergreens, and a good shelter for tender trees and shrubs.

The wood is hard, heavy, and smooth, beautifully veined with red streaks, admits of a fine polish, and is extremely durable. Hence it is used by turners and cabinet-makers in the manufacture of spoons, cups, and various ornamental articles, and might perhaps be substituted for box in wood engraving. On account of its strength and durability, it is also converted into cogs for mill-wheels, into axle-trees, flood-gates, &c.

According to Dambourney, a decoction of yew-berries imparts a fine *chamois*-dye to wool previously immersed in a weak solution of bismuth. On boiling the root, together with the bark of the common birch-tree, (the wool being first boiled in a solution of tin,) he obtained a beautiful cinnamon colour; which by the addition of alum, assumed a bright red colour.

Qualities.—The wood of this tree is resinous, and has a slight terebinthine odour. The leaves are bitter, nauseous, and slightly acrid to the taste. The succulent covering of the fruit is soft and slimy to the touch, mawkishly sweet and mucilaginous, and appears to consist chiefly of mucus and sugar. The nut of the drupe is bitter, nauseous, somewhat austere, and slightly acrid; the kernel containing an oily substance on which probably its noxious qualities depend. We are not acquainted with any analysis either of the leaves or fruit.

Poisonous Properties.—From time immemorial this tree has been regarded as exceedingly poisonous. The ancient Greek writers asserted that the Arcadian Yew was destructive to those who ate of it or slept under its shade. Dioscorides, Galen, and Pliny attribute to this tree the same noxious effects, but Theophrastus affirms that the fruit is not poisonous. Matthiolus states that the yew-trees which grew in the vicinity of Narbonne had a pernicious influence upon persons who slept under their shade. Cæsar in his Commentaries relates that Cativulus, king of the Eburones, poisoned himself with the juice of yew. Ray * mentions that a gardener employed in clipping a yew-tree which grew in a garden at Pisa, was unable to proceed with his work for more than half an hour at a time without being seized with violent pain in the head. The Jesuit Schott † affirms, moreover, that the branches of this tree plunged in a fish-pond will stupify and benumb the fish so that they may be taken with the hand.

There can be no doubt of the poisonous qualities of the leaves upon man and various animals. Matthiolus ‡ relates from Theophrastus, that ruminating animals eat the foliage with impunity, while others are killed by it. Deer, sheep, and goats are said to eat it with impunity, but it is certain that horses, asses and oxen are speedily destroyed by it: and it differs from many other plants in that, the loppings or half-dead branches are equally pernicious with the recent leaves, and have been in most cases the source of accident. Several cases are on record of its virulent effects upon horses. Mr. Tatem § mentions that two horses were put under a yew-tree, which they cropped with eagerness: no unfavourable circumstances appeared for three hours, when having staggered a few paces they both dropped, and before the harness could be taken off they were dead. We have been informed of an instance in which the lopped and withered branches accidentally placed in the way of a team of four horses, proved fatal a few hours after the repast, and before any assistance could be procured. Baudin and Henon, of the veterinary school of Lyons, gave six ounces of yew-leaves to a horse; he fell dead in an hour, without convulsions. The same dose given to a mule with hay, produced no symptom for four

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* Hist. Plant. ii. 1416.

† Flore Med. tom. iv. p. 122.

‡ Comment. *l. c.*

§ Loudon's Mag. of Nat. History, vol. viii. p. 91. See also Edinburgh Annual Register, vol. vii. p. 162.

hours except purgation, but the animal died at the expiration of another hour. On opening the carcass, the yew-leaves were found in the stomach, mixed with the hay, retaining their form and colour; a few spots or ecchymoses, about the size of the finger-nail, were observed in the small intestines*. Nevertheless, it has been asserted by Viborg, that the leaves in small proportion may be added to forage without danger, and that the quantity may be gradually increased, so that at length they may be eaten almost alone. This statement requires confirmation.

The leaves are also poisonous to the human subject. Dr. Percival† relates that the fresh leaves were administered to three children of five, four, and three years of age, near Manchester, for worms. Yawning and listlessness soon succeeded, and the eldest vomited a little and complained of pain, but the others expressed no sign of pain. They all died within a few hours of each other.

There is considerable discordancy in the statement of authors respecting the fruit or berry as it is called of this tree. According to Dioscorides, the fruit has the singular property of blackening the plumage of birds that feed on it‡, and produces abundant alvine evacuations and flux of blood when eaten by man; and Matthiolus, in his commentary upon that author, mentions that such accidents, accompanied with inflammation of the abdominal viscera, occur to shepherds in mountainous countries who partake of the fruit. On the other hand, Theophrastus, as already observed, states that the fruit is not poisonous. Pena and Lobel§ affirm, that swine feed on it in some parts of England, and that children eat it with impunity. Gerard ‖ also has the following remarks:—"When I was yong and went to schoole, diuers of my schoole-fellowes and likewise my selfe did eat · our fils of the berries of this tree, and haue not only slept under the shadow thereof but among the branches also without any hurt at all, and that not one time but many times." Some writers of the present day tell us that the berries are poisonous, others that a few of them are not injurious, and others that the succulent coat of the fruit is fœtid and noxious. We are enabled to corroborate the statements of Lobel and Gerard to a certain extent, viz., that it is the red succulent covering of the fruit which is not injurious and may be eaten largely without danger, while the nut or seed is poisonous. We have observed children in country churchyards eating greedily, as it appeared, the whole fruit; but on asking a little boy if he had ever eaten any before, he said, "Oh yes! very often; but he spat out the seeds because the other boys did, and they told him the seeds were rank poison." We have also seen thrushes and starlings eating the fruit. It is possible, as the intelligent author of the following case suggests, that a few of the nuts or seeds may be swallowed and pass through the intestinal canal unaltered; but when the shell is broken and the seed is exposed to the gastric juice, it is liable to produce effects equally sudden and fatal as the leaves.

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* Flore Economique, p. 567.

† Med. Commentaries, vol. vi. p. 33.

‡ A similar effect takes place from the use of hemp-seed.

§ Stirpium Adversaria.

‖ Herbal, ed. by Johnson, p. 1371.

The only case with which we are acquainted of poisoning by the seeds is related by Mr. Hurt *, of Mansfield. This gentleman states that he was sent for about half past one o'clock, P.M., to see a child three years and a half old, who had eaten a quantity of yew-berries. He found, on enquiry, that this child, with five others, had left home about half past ten o'clock, A. M., and soon after they were observed under a yew-tree. A little after twelve o'clock they returned home to dinner. Whilst at table, the father remarked that during the time the child was eating it looked very ill, the eyelids fell and turned of a very dark colour, and it seemed as if going to sleep; but he heard no complaint of pain. Vomiting, however, came on and along with some pieces of potato the child had eaten were observed some berries or portions of berries. The parents sent immediately for Mr. H.; he went and took a strong emetic mixture with him, but before he arrived the child had been convulsed and was dead. He divided the mixture among the other children, who vomited a quantity of the pulp of the fruit and experienced no ill effects; as they were older it is probable they had not swallowed the seeds. The lips of the deceased were purplish and the pupils very much dilated. On examination of the body, two days subsequently, a number of purple spots or patches were observed on the breast, abdomen, and anterior parts of the arms, legs, and thighs. The pupils were much more contracted. On opening the stomach, some berries (pulp and seed) which had been masticated were found, mixed with a very large quantity of mucus and pieces of potato. After washing the stomach several extensive patches, much redder than natural, were observed, and the mucous membrane covering them was so much softened as to be abraded with the slightest friction. The lungs were of a very florid red colour anteriorly, but very dark posteriorly, where the blood had gravitated. The veins and sinuses of the brain and its meninges were full of a dark-coloured blood.

It is evident that the treatment in cases of poisoning by the Yew must be very prompt to be of service. The same measures should be pursued as directed under Thorn-apple and other narcotics.

Medicinal Properties and Uses.—The medicinal properties of the Yew appear to have attracted scarcely any attention from physicians, and the little that can be gathered respecting it is vague and unsatisfactory. Dr. Loder, indeed, published an

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* In Lancet, for Dec. 10, 1836.

Inaugural Dissertation[*], in which he states that the *extractum taxi* is a useful narcotic in the dose of one or two grains dissolved in water or spirit, and gradually increased; and he recommends it in obstinate tertians, rheumatism, epilepsy, and amenorrhœa. An Italian physician, with whose name we are unacquainted, asserts that the leaves of Yew have a power similar to digitalis over the action of the heart and arteries, diminishing the circulation; and if given in too large doses, to be as certainly fatal as that plant. Dr. Hildebrand[†] mentions, that a decoction of the wood of this tree is a favourite popular remedy in some parts of Germany for hydrophobia. According to Claudius Drusus, the juice of the Yew was esteemed by the ancients a sure antidote to the bite of the viper.

We have sanguine expectations that when the properties of the Yew are more fully investigated, it will be found a valuable addition to the list of remedial agents.

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[*] De Taxo baccata, 4to, 1794.

[†] Hufeland's Journal, Vol. vii. No. 4.

POSTSCRIPT.

We have now completed the history of those indigenous and familiar plants which appear to be most valuable in a medical point of view. Although we cannot hope to have made a faultless selection, we have endeavoured to illustrate those plants, the efficacy of which, in the cure of disease, is asserted and reiterated by able and practical men. We cannot vouch that *every* property ascribed to them will bear the test of rigid scrutiny;—those which appeared doubtful have been mentioned, chiefly that attention may be directed to them, and that experience may decide their value. In many instances there has been no alternative but to introduce them solely on the testimony of the ancient writers; for in recent times, although many persons condemn them altogether, they do not pretend that their censure is the result of investigation and experiment. The popular remedial uses of the various plants have been adduced as often as they could be ascertained, with the hope that such information, rude though it be, may at any rate lead to a more accurate and scientific knowledge. There may be some plants of little importance contained in this Work, but we should prefer to introduce a few that are inert than to omit one that is important and valuable. Doubtless there are some yet undescribed which are nevertheless endued with medicinal virtues; these it shall be our object to discover and investigate, and if this work shall meet with approval and success, they will either be published in a supplementary form, together with the poisonous *Fungi*, or be incorporated with a future edition.

With regard to the positive merits or defects of the present Work, we shall merely observe that, while faults of material consequence, it is hoped, will not be discovered, there must be, in every such production, some errors and omissions. Communications candidly pointing out such defects, suggestions as to the improvement of the Work, and information respecting the properties of indigenous plants, (whether contained in these pages or not,) are respectfully requested, and shall receive due attention.

We have appended a Glossary of the terms occurring in the botanical descriptions, with references, whenever it appeared necessary, to examples in the plants here described; and this, in connection with the plates and dissections, will be of some practical service. The Descriptions themselves have in several instances been given in a more explicit and copious manner than was necessary for the mere discovery of the plants to which they relate, in order that the Work might in some measure become an Introduction to Botany, and that the reader might not only be enabled to identify any particular plant, but also obtain a knowledge of its structure, and thereby of the structure and character of those allied to it.

We have also included in the Appendix directions for drying and preserving plants, and for making the various pharmaceutical preparations; a classified table of the characters of the plants here introduced, considered as articles of the Materia Medica; a synoptical table of their properties and uses, &c.

APPENDIX.

No. I.

GLOSSARY OF THE BOTANICAL TERMS USED THROUGHOUT THE WORK.

A, in composition signifies without, as *Aphyllous* without leaves; *Apetalous*, destitute of petals.

Abortion, signifies an imperfect development of any organ.

Abrupt, truncated;—applied to the extremity of a part which is apparently cut off transversely.

Abruptly-pinnate, when a compound leaf has no terminal or odd leaflet.

Accrete, fastened to another body and growing with it.

Accumbent, lying on;—this term is employed when speaking of *cruciferous* plants, to signify a radicle which lies upon the edges of the cotyledons.

Acerose, needle-pointed;—applied to a leaf when it is linear, very sharp and rigid.

Achenium, an indehiscent, one-seeded, one-celled pericarp, with the integuments distinct, commonly called *seed*;—applied to the fruit of *Syngenesious* plants, or *Compositæ;* also to that of the *Borage* tribe.

Acinaciform, scimitar-shaped.

Acini, the little berries of compound fruits, as of Strawberry and Mulberry.

Aculeate, furnished with aculei or prickles.

Aculei, prickles;—sharp hard processes of the epidermis, falling off when old, and thus differing from spines, which are persistent.

Acuminate, taper-pointed;—terminating very gradually in a point, as the leaves of Horse-Chestnut, Willow, &c.

Acute, sharp-pointed;—terminating at once in a point.

Adnate, adhering;—applied to anthers which are attached to the filament by the back, that is, by their whole length: sometimes applied to leaves which are attached at the base by their upper surface to the stem.

Æstivation, the state of the flower when folded up in the bud.

Aggregate, collected together;—applied to the inflorescence.

Akenium, see *Achenium.*

Alæ, wings;—the two lateral petals of papilionaceous flowers.

Albumen, the substance under the inner coat of the testa of seeds, surrounding the embryo ; it is sometimes absent.

Alburnum, the young wood before it becomes hard and coloured.

Alternate, placed one above another (as if in a spiral direction) round a common axis ; as many leaves round the stem.

Alveolate, resembling a honey-comb.

Amentum, catkin ;—a collection of flowers destitute of calyx and corolla, but furnished with bracteæ, and falling off in a single piece ; as in Oak, Willow, &c.

Amplexicaul, stem-clasping ;—the base of the leaf embracing the stem ; as the leaves of Henbane, Lettuce, White Poppy.

Anastomosing, the uniting or inosculation of veins in leaves.

Angular, having angles or forming angles ; as the leaves of Thorn-Apple.

Angulo-dentate, angularly-toothed ;—having teeth-like angles.

Annular, having rings or circles.

Annulations, rings or circles.

Anterior, growing in front of some other body.

Anther, the body attached to or situated on the top of the filament, composed of two lobes or cells containing the *pollen* or *farina*,—the element or semen by which the ovules contained in the germen are fecundated.

Antheriferous, bearing anthers.

Anthesis, the period when a flower opens.

Apetalous, without petals.

Apex, the summit ;—generally applied to a pointed surface.

Apiculate, terminating abruptly in a little point.

Appressed, placed close ; hairs which lie close to the stem in an erect position are said to be appressed. The pods of Mustard are appressed.

Approximate, near together.

Apterous, without wings, or membranous margins so called.

Aquatic, growing in water.

Arborescent, having a tendency to become a tree.

Arcuate, curved or bent like a bow.

Arillate, having the appendage termed arillus.

Arillus, aril ; a process of the placenta adhering to the hilum of seeds and sometimes enveloping them.

Aristate, awned ; abruptly terminated in a hard straight body, as the glumes of most grasses.

Articulated, jointed ; having manifest joints ; or falling off at the joints.

Ascending, at first trailing on the ground, then erect ; as the stems of Wall Germander.

Attenuate, gradually diminishing in breadth, as the leaves of Hounds-tongue.

Auriculate, having auricles or appendages at the base resembling ears.

Awn, the arista or beard of the glumes of grasses.

Awned, having a beard or awn.

Axilla, axil; (literally the *arm-pit*,) the angle where the base of a leaf or branch joins the stem.

Axillary, placed in the axilla or axil; as the racemes of Brooklime, the flowers of Thorn-Apple.

Axis, the centre around which parts are arranged; the line, real or imaginary, which passes through any thing.

B.

Baccate, berried; having a juicy succulent covering.

Band-shaped, narrow, very long, with the margins parallel.

Beak, a hard sharp point, resembling the beak of a bird; as the legume of Fenugreek.

Bearded, having long weak hairs like a beard.

Bell-shaped. See *Campanulate*.

Berry, a pulpy fruit, containing several seeds.

Bicuspidate, having two points.

Bidentate, having two teeth.

Biennial; a plant is said to be biennial which requires two years to mature its fruit and then dies; as the Burdock, Foxglove, &c.

Bifarious, arranged in two opposite rows.

Bifid, divided down to the middle into two parts; two-cleft; as the stigma of Bugle, Foxglove, Ground Ivy.

Bifoliate; applied to leaves when the common petiole is terminated by two leaflets growing from the same point.

Bilabiate, having two lips; as the corolla of Ground Ivy, Marjoram, Rosemary.

Bilobed, divided into two lobes.

Bilocular, having two cells; or divided into two cells.

Binate, having two leaflets.

Bipartite, divided nearly to the base into two parts.

Bipinnate, twice-pinnated; applied to pinnate leaves, when the leaflets themselves are pinnate; as in Burnet-Saxifrage, Caraway, Carrot, Chamomile, Fern.

Bipinnatifid, twice pinnatifid. See *Pinnatifid*.

Biserrate, twice serrated; when the teeth or serratures of a leaf are again serrated.

Bistipulate, furnished with two stipulæ.

Biternate, twice divided in three; as the leaves of Fennel, Masterwort, &c.

Bitten, præmorse; applied to roots when obtuse and irregular at the end as if bitten off.

Bivalved, two-valved.

Bracteæ, bracts; small leaves, often coloured, generally entire, situated between the true leaves and the calyx, mostly near the latter. Each flower-stalk of the Foxglove is subtended by a bractea. See also Marjoram, Violet, and several others.

Bracteate, furnished with bracteæ.

Bracteolæ, bractlets ; very small bracteæ.

Branchlets, small branches.

Bristles, short stiff hairs.

Bristly, covered with stiff hairs ; as the fruit of Carrot.

Buckler-shaped, scutate ; having the figure of the ancient small round buckler.

Bud, the rudimentary state of branches, leaves, and flowers, consisting of imbricated scales.

Bulbiferous, bulb-bearing, as the Lily.

Bulbils, little bulbs which form in the axis of the stem and leaf of some plants and fall off spontaneously.

Bulbs, underground buds resembling roots, and consisting of numerous fleshy scales imbricated over each other.

Butterfly-shaped. See ***Papilionaceous***.

C.

Caducous, falling off soon ; as the calyx of Celandine, Poppy, &c.

Cæsious, greyish.

Calcarate, spurred, or spur-shaped.

Calycine, of or belonging to a calyx.

Calyx, the outer envelope of a flower, consisting of several leaves, more or less united by their margins or distinct, usually of a green colour, and less delicate than the inner series or *petals*.

Campanulate, shaped like a bell ; applied to a calyx or corolla in which the tube is inflated and gradually swells into the limb ; as the corolla of Bindweed, Lily, Deadly Nightshade.

Capillary, very slender, resembling a hair ; as the filaments of many stamens.

Capitate, growing in a head, or resembling a head ; a stigma is said to be capitate when it is large, obtuse, and round.

Capsule, a dry, many-seeded fruit, opening by valves ; as in Colchicum, Foxglove, &c.

Carina, a keel like that of a boat ; also the lower petal of a papilionaceous flower.

Carinate, keel-shaped.

Cariopsis, a small, one-celled, indehiscent pericarp, adhering to the seed, as in grasses.

Carpels, the small parts of which compound fruits are formed. See *Crow-foot*. The two pieces into which the fruit of umbelliferous plants separates are frequently called carpels ; as in Caraway.

Cartilaginous, gristly ; hard and tough ; as the coat of some seeds.

Caruncle, a small protuberance.

Catkin, see ***Amentum***.

Caudate, tailed ; having a process like a tail.

Caudex, the trunk or stem ; also applied to the body of the root.

Cauline, of or belonging to the stem ; arising from the stem.

Cell, the hollow part or parts of a capsule, in which the seeds are lodged ; also the part of anthers which contains the pollen.

Celled, having cells.

Cellular, composed of cells; as the tissue named cellular.

Cernuous, nodding, drooping, or pendulous.

Chaffy, bearing processes resembling chaff.

Channels, depressions between the ridges of the fruit of umbelliferous plants ; beneath these are the vittæ or oily receptacles ; also the longitudinal furrows on the stems of plants.

Channelled, having a channel or channels; also applied to leaves which are long and concave.

Chinks, longitudinal fissures.

Ciliæ, long, soft, parallel hairs like those of the eye-lash.

Ciliated, fringed with ciliæ or hairs like those of the eye-lash ; as the leaves of Houseleek, the base of the leaves of Thyme.

Cinereous, ash-coloured ; grey.

Circinate, rolled spirally round, like a sharp crook.

Cirrhous, having tendrils or claspers.

Cirrhus, a tendril ; usually an elongation of the petiole ; it serves as a fulcrum or support for plants.

Clavate, club-shaped ; gradually thickening upwards from a slender base ; as the filaments of White Lily.

Claw, unguis ; the taper base of a petal. See Clove-Pink.

Cleft, divided, but not as far as the base.

Clustered, collected in parcels, having a roundish figure.

Clypeate, shaped like a Roman buckler.

Coadunate, united together.

Colwebbed, covered with loose hairs, as if with a spider's web.

Cochleate, twisted in a short spire, like a snail's shell.

Cæsious, blueish green, with a mixture of grey.

Cohering, connected.

Columella, the part or axis of a seed-vessel from which the valves separate.

Columnar, formed like a column.

Compact, close, crowded.

Compound, used to express the union of several things together ; thus, a compound umbel is formed of several simple umbels ; a compound flower, of several simple flowers ; a compound leaf, of several smaller leaflets.

Compressed, flattened longitudinally or laterally ; as the fruit of Brooklime, Milkwort.

Concave, hollow.

Concrete, formed into one mass, joined together.

Conduplicate, twice doubled, or twice folded.

Cone, an amentum, the scales of which are hard, spread open, and contain naked seeds ; as in Fir, Pine.

Conical, broad and round at the base, tapering gradually upwards; as the receptacle of Daisy.

Conjugate, applied to leaflets which are joined together in pairs.

Connate, joined together at the base, as the petals of Fumitory. When the bases of the two leaves are combined at the base, with the stem running through the middle, they are said to be connate.

Connivent, converging.

Converging, having a gradually inward direction.

Convex, having a globular surface.

Convolute, rolled together.

Cordate, heart shaped; as the leaves of Burdock, Coltsfoot, Dead-Nettle. When joined by a hyphen to another word, it signifies a figure between the two; as *cordate-reniform*, signifies between heart-shaped and kidney-shaped; *cordate-ovate*, between heart-shaped and egg-shaped; *cordate-oblong*, between heart-shaped and oblong; as the lower leaves of Betony, Clary.

Coriaceous, thick and tough; having the consistence of leather; as the seed-vessel of Asarabacca, the leaves of Black Hellebore.

Corneous, horny, resembling horn.

Cormus, a subterranean bud, or dilated stem, internally fleshy, externally clothed with membranous withered scales; it is commonly but improperly called a *solid bulb*. See Colchicum and Saffron.

Corolla, the inner envelope of the flower, immediately within the calyx; it is of one piece or of many leaves called petals, usually coloured, and of a thin delicate texture.

Corolline, of the corolla.

Corona, crown; applied to the crown-like cup, found at the orifice of the tube of the corolla in some flowers.

Corrugated, having a wrinkled or shrivelled appearance.

Cortical, of or belonging to bark.

Corymb, a kind of raceme, in which the stalks of the lower flowers are much longer than those of the upper, so that the flowers themselves are nearly on the same level; as in Lettuce, Tansy, Woodruff.

Corymbose, arranged in the manner of a corymb; as the flowers of Feverfew.

Costate, ribbed.

Cotyledons, the embryo leaves or lobes of the seed; the leaves which first appear after germination. The number and position of the cotyledons form the basis of the modern *natural* system of botany founded by Jussieu. Plants that have two cotyledons, as the Apple, Bean, Crowfoot, and many others, are named *Dicotyledonous;* those with but one cotyledon, as Arum, Lily, the Grasses, &c., are called *Monocotyledonous;* those which have no cotyledon, as Ferns, Mosses, &c., are *Acotyledonous.*

Creeping, trailing upon the ground, and taking root at the joints.

Crenated, scolloped at the margin; as the leaves of Daisy, Foxglove, Ground Ivy, &c. *Crenate-serrate*, between crenate and serrate; as the leaves of Dead-Nettle, and Black Horehound.

Crenulate, resembling crenate, but the scollops very small.

Crest, an elevated appendage, terminating a particular organ; a petal is crested when it is terminated by a fringed appendage, as in Milkwort; the anther of Fir and Pine is crested; a stamen is crested when the filament projects beyond the anther.

Cruciate, *Cruciform*, } shaped like a Maltese cross. A flower is said to be cruciate when it consists of four petals placed opposite each other at right angles. The flowers of the class Tetradynamia are all cruciate; as Cuckoo-flower, Mustard, Water-Cress.

Cruciferous, bearing cruciate flowers.

Crustaceous, having a hard brittle shell.

Cucullate, hooded or cowled; curved inwards so as to represent the cowl of a monk.

Culm, the stem of grasses, scitamineous plants, &c.

Cultrate, shaped like a pruning-knife.

Cuneate, *Cuneiform*, } wedge shaped, the broadest end uppermost, tapering to the base. *Cuneate-ovate*, signifies, between wedged-shaped and ovate.

Cupula, cupule; an hemispherical cup; as that of the Acorn, &c.

Cuspidate, spear-pointed; tapering gradually into a rigid point.

Cuticle, the scarf-skin or epidermis; the thin membrane which forms the external surface of plants.

Cyathiform, cup-shaped; resembling a drinking-cup.

Cylindrical, cylinder-shaped, round, as distinguished from angular.

Cymbiform, boat-shaped.

Cyme, a mode of inflorescence resembling a flattened panicle; the peduncles proceeding from the same point, while the pedicels are of unequal length, but raise the flowers to nearly the same height; as in Elder. The spurious whorls of Labiate plants are also sometimes called cymes.

Cymose, disposed in a cyme; or resembling a cyme;—as the racemes of Bitter-sweet.

D.

Decandrous, having ten stamens.

Deciduous, falling off; leaves which are shed annually are said to be deciduous; the calyx which falls off before the fruit ripens is deciduous;—as in Fumitory, Thorn-Apple.

Declinate, bending downwards; as the stamens of Mullein.

Decompound; a leaf is said to be decompound when it is twice or thrice pinnate; a panicle, when its branches are also panicled, &c.

Decumbent, reclining upon the earth at some part; as the stems of Thyme.

Decurrent; a leaf is said to be decurrent when the base extends down the leaf-stalk or stem; as in Comfrey, Foxglove, Mullein.

Decussate; when the leaves or branches cross each other at right angles they are said to be decussate.

Deflexed, turned downwards.

Dehiscent, gaping, opening; applied to the mode in which anthers and fruit burst open and discharge their contents.

Deltoid, applied to a solid leaf, the transverse section of which resembles the Greek Δ.

Dentate, having the margin divided into small incisions, resembling teeth.

Dentato-sinuate, scolloped and toothed.

Denticulate, having the margin finely and slightly toothed.

Depressed, pressed down; flattened vertically.

Diadelphous, having stamens collected into two bodies; as in Milkwort, Rest-harrow, &c.

Diandrous, having two stamens.

Dichotomous, branched in pairs; as the stem of Purging Flax, Night-shade, &c.

Dicotyledons. See *Cotyledon.*

Didymous, twin, two united; as the fruit of Madder and Woodruff; the anthers of Mercury, &c.

Didynamous, having two long and two short stamens in the flower; as in Foxglove, Dead-Nettle, Thyme, &c.

Diffuse, scattered, widely spreading.

Digitate, fingered, shaped like the hand spread open; as the leaves of Horse-Chestnut.

Digynous, having two pistils or styles.

Diœcious; when the same species has males or stamens only in the flowers of one individual, and females or pistils only in the flowers of another, such a plant is named diœcious; as Bryony, Juniper, Mercury.

Discoid; when in compound flowers the florets are all tubular, the head of flowers is said to be discoid. In other cases when the florets of the centre of a head of flowers are more perfect than the rest, they are called discoid.

Disk, the fleshy annular process that surrounds the germen or ovary in some flowers; the centre of a head of compound flowers; also a receptacle which adheres to the calyx.

Dissepiments, the partitions by which a seed-vessel is divided, and by which it is separated into cells.

Distichous, arranged in two opposite rows.

Divaricate, straggling; spreading or branching wide apart.

Dodecandrous, having twelve stamens.

Dolabriform, axe-shaped.

Dorsal, growing on the back.

Doubly-serrated, twice-serrated.

Down, short soft hairs resembling the down of birds.

Drupe, a kind of fruit with a fleshy succulent exterior, and containing a hard stone or nut; as in Cherry-Laurel, Mezereon.

E.

Eared, having ear-like projections at the base; as the lower leaves of Borage and Sage.

Egg-shaped, see *Ovate.*

Elliptical, having the figure of an ellipsis; lanceolate, but as broad in the middle as an ovate leaf. When joined by an hyphen to another word, it signifies a figure between the two.

Elongated, lengthened out.

Emarginate, having a small notch at the end; as the lower lip of the corolla of Bugle, the upper lip of Eyebright.

Embossed, projecting in the centre like the boss of a shield.

Embracing, clasping round with the base.

Embryo, the young plant in the seed.

Endocarp, the shell of a fruit.

Endogenous, growing by additions to the inside; as the stems of Monocotyledonous plants.

Endopleura, the inner tegument of a seed.

Endosperm, the same as albumen.

Ensiform, sword-shaped, long and straight, the margins parallel, and the point acute; as the leaves of the Flag.

Entire, having an undivided margin; not lobed, crenated or serrated.

Epicarp, the external skin or covering of a fruit.

Epidermis, the cuticle or outer skin; generally applied to the bark.

Epigynous, inserted upon or into the pistil; as the stamens of Orchis.

Epiphyllous, growing upon the leaves.

Equal, applied to petals and sepals when they are equal in size and shape to each other.

Erectly-spreading, between erect and spreading.

Erose, gnawed, bitten.

Evanescent, quickly vanishing.

Even, without inequalities of surface, such as wrinkles, &c.

Exalbuminous, without albumen.

Exserted, projecting beyond or out of any other part. Stamens which are longer than the corolla are said to be exserted.

Exstipulate, without stipulæ.

Extra-axillary, not inserted in the axils of the stem or branches.

F.

Falcate, } bent or curved like a sickle; as the fruit of Fenugreek.
Falciform, }

Farinose, mealy.

Female flowers or florets are those which contain pistils only.

Fascicled, } arranged in bundles or parcels.
Fasciculate, }

Fasicle, a bundle; a species of inflorescence, resembling a compound corymb.

Fastigiate, pointing upwards and nearly parallel, as some branches; also tapering upwards, like a pyramid.

Fibres, } the minute subdivisions of the root, which absorb nutriment.
Fibrils, }

Fibrillose, furnished with little strings or fibres.

Fibrous, composed of fibres, or furnished with fibres.

Filament, the thread-shaped part of a stamen which supports the anther.

Filiform, thread-shaped; as the styles of many plants.

Fimbriate, fringed.

Fistular, } *Fistulous*, } hollow, like a pipe or reed; as the stem of Hemlock, Onion.

Flaccid, feeble, weak.

Flagellæ, runners without leaves.

Flat, plane, even.

Flexuous, having a bent or undulatory direction, zigzag.

Floccose, covered with little tufts like wool.

Floral, of or belonging to the flower.

Floral envelopes, the calyx and corolla which surround and protect the stamens and pistils of a flower.

Floral leaves. See *Bracteæ*.

Florets, little flowers; chiefly applied to syngenesious flowers and those of grasses.

Floriferous, bearing flowers.

Flosculous, applied to compound flowers, consisting of many tubular florets.

Foliaceous, having the form or appearance of leaves.

Follicle, a simple, one-celled, one-valved seed-vessel, opening by a suture along its face; as in Bearsfoot, Black Hellebore, Peony, &c.

Footstalks, the stalks or petioles of leaves.

Fornicate, arched.

Free, distinct, not connected together; the germen or fruit is said to be free when it neither adheres to the corolla nor calyx.

Frond, the leaf of ferns and palms.

Fructification, all those parts tending to the production of or constituting the fruit. The bracteæ, calyx, corolla, stamens, pistil, and pericarp are called organs of fructification or reproduction, as distinguished from the leaves, root, &c., which are organs of vegetation.

Frutescent, shrubby.

Fugacious, quickly perishing.

Funicle, the little stalk by which the seed is attached to the placenta.

Funnel-shaped, see *Infundibuliform*.

Furcate, forked.

Furrowed, having longitudinal channels or depressions; as the stem of Meadow-sweet and several Umbelliferæ.

Fuscous, blackish brown.

Fusiform, shaped like an ancient spindle; as the root of Carrot, Dandelion, &c.

G.

Galeate, helmet-shaped, as the upper lip of the corolla in some plants.

Gamosepalous, applied to the sepals or leaves of the calyx when connected together at the base.

Gemmæ, leaf-buds, as distinguished from alabastri or flower-buds.

Gemmiferous, bearing buds.

Germen, ovary; the hollow base of the pistil, usually divided into cells, and containing the ovules or the rudiments of the seed. The germen is called *inferior* when situated below the floral envelopes, as in Valerian, Woodruff, and all Syngenesious flowers; *superior* when the contrary is the case, as in Crowfoot, Poppy, Rose, Primrose, and all Labiate flowers.

Germination, the sprouting of a seed.

Gibbous, protuberant, swelled.

Glabrous, smooth, destitute of hairs; as the leaves of Brooklime.

Gland, the fruit or nut of the oak.

Glands, small concave bodies, secreting a peculiar matter, situated on various parts of a plant; they are either stalked or sessile.

Glandular, } having glands; or clothed with hairs bearing glands at their
Glandulose, } tips;—as the peduncles and fruit of Roses.

Glandularly-serrated, having serratures tipped with glands.

Glaucescent, somewhat glaucous or sea-green.

Glaucous, of a greyish blue colour; also sea-green.

Globose, } forming nearly a true sphere; as the berry of Arum, Aspara-
Globular, } gus, Buckthorn, Black Currant, Juniper.

Glomerate, gathered into roundish heaps or heads.

Glumes, the membranous bracteæ at the base of the florets in grasses. See Darnel, &c.

Granular, divided into little knobs or knots, as the root of some plants.

Grumose, } knotted, collected at intervals into small clustered knots or
Grumous, } grains.

Gynandrous, having the stamens growing on the style or pistil.

H.

Halbert-shaped. See *Hastate*.

Habit, features or general appearance of a plant.

Hastate, halbert-shaped, somewhat arrow-shaped, enlarged at the base into two spreading lobes; as the upper leaves of Bitter-sweet.

Hastate-sagittate, between halbert and arrow-shaped; as the leaves of Arum.

Helmet, the arched upper lip of labiate plants, and some others.

Helmet-shaped, resembling a helmet; as the upper sepal of Aconite.

Hemispherical, resembling half a sphere; as the involucre of the Daisy.

Herbaceous, perishing annually.

Hermaphrodite, containing two sexes, both stamens and pistils in the same flower; as the disk florets of Chamomile, and most flowers.

Hexandrous, having six stamens.

Hilum, the scar or mark on the seed which indicates the place where it adhered to the placenta.

Hirsute, shaggy; applied to leaves, &c., when the surface is covered with long weak hairs.

Hispid, covered with long rigid hairs; as the leaves of Borage, Nettle, &c.

Hoary, covered with white or greyish down.

Honey-combed, having pits like a honey-comb; as the receptacle of Chamomile, the seeds of Poppy.

Honey-pore, a pore in flowers which secretes a honey-like juice.

Hooded, curved or hollowed at the end into the shape of a hood.

Horn, a long subulate process in a flower.

Hypogynous beneath the female organ; applied to a calyx or corolla which is situated below the germen or ovary; sometimes to the stamens, as in those of Flax.

Hypocrateriform. See *Salver-shaped*.

I.

Icosandrous, having twenty stamens or more attached to the calyx or corolla.

Imbricate, laid one over another, like tiles upon a roof.

Inarticulated, without joints.

Incised, deeply cut; as the leaves of Crowfoot, Mugwort, &c.

Inciso-serrate, between incised and serrate; as the leaves of Hemlock, Tansy.

Inclined, bending inwards, forming a slight curve.

Incumbent, lying upon; used in speaking of the seed of Cruciferous plants, to indicate that the radicle lies upon the back of the cotyledons. See Hedge-Mustard. Also applied to a versatile anther.

Indehiscent, not opening by valves.

Indigenous, native.

Induplicate, doubled, or folded inwards.

Indurated, hardened.

Indusium, the membrane that encloses the thecæ of ferns.

Inferior, beneath; applied to the calyx, corolla, or stamens when attached below the germen; and to the germen when situated below either of them; a radicle which is situated at the lower end of the seed at the hilum is said to be inferior.

Inflexed, bent inwards.

Inflorescence, disposition of the flowers.

Infra-axillary, below the axils of the leaves.

Infundibuliform, funnel-shaped; applied to a calyx or corolla in which the tube is ob-conical, and gradually enlarges upwards into the limb; as the outer florets of Blue-Bottle, the corolla of Centaury, Gromwell, Thorn-apple.

Innate, growing on, attached by the base; as many anthers.

Integument, the outer covering of a seed.

Internodes, the spaces between the joints of a stem.

Interruptedly-pinnate, pinnate with smaller leaflets intervening between the larger ones; as the leaves of Agrimony, Dropwort, and so on of other compounds with this word.

Interstices, see *Channel.*

Inverse, inverted.

Involucel, the little leaves or bracteæ at the base of the secondary umbels or umbellules; sometimes called *partial* involucre.

Involucre, the small leaves or bracteæ situated at the base of umbels, and usually denominated the *general* involucre; also the common calyx of Syngenesious flowers, which may be considered as imbricated bracteæ. See Coltsfoot, Dandelion, &c.

Involute, rolled inwards.

Irregular, unsymmetrical; wanting equality or uniformity in the disposition of parts; as the corolla of Mullein, Violet, Horse-Chestnut.

J.

Jagged, coarsely cut.

Joints, the places at which the pieces of a stem are united to each other.

K.

Keel, carina; when the midrib of a leaf or petal is sharp and elevated it is called a keel; the union of the two lower petals of papilionaceous flowers into one is named a keel.

Kidney-shaped, see *Reniform.*

Knee-jointed, bent like the knee.

L.

Labiate, having lips; applied to the corolla of those plants which is separated into two unequal divisions, hence also called bilabiate; as Mint, Lavender, Rosemary, Sage, Thyme, &c.

Laciniated, slashed, cut or divided into unequal segments.

Lactescent, yielding milky juice; as the cormus of Colchicum.

Lacunæ, little pits or depressions.

Lamellate, divided by little plates.

Lamina, the expansion or blade of a leaf as distinguished from the stalk or petiole; also of a corolla, as distinct from its unguis or claw.

Lanceolate, lance or spear-shaped, oblong, but attenuated at each end; as the leaves of Common Flax and Mezereon. *Lanceolate-ovate*, signifies between lanceolate and ovate; *lanceolate-subulate*, between lanceolate and awl-shaped; and so on.

Lateral, on one side, or fixed near the side.

Lax, loose, not compact.

Leaflets, pinnæ, small leaves, the parts of compound leaves.

Leaves are expansions of the bark of a plant; they are the organs of motion and respiration; they consist of a *stalk* or petiole, and a *blade* or *lamina*.

Legume, a pod; a one-celled, two-valved fruit, opening by a suture along both its face and back; as in Broom, Rest-Harrow, Melilot, &c.

Leguminous, producing legumes.

Lenticular, shaped like a lens; as the fruit of Masterwort.

Liber, the inner bark.

Ligula, the membrane at the top of the petiole of grasses, &c. See Darnel.

Ligulate, strap-shaped; long and narrow, the two opposite margins parallel; as the outer florets of Chamomile, Daisy, Dandelion, Lettuce.

Ligneous, woody; having the texture of wood.

Limb, the broad part or extremity of a calyx or corolla.

Linear, narrow, rather short, the margins parallel; as the leaves of Juniper, Yew, &c. When joined by a hyphen to another word, it signifies a figure between the two, as *linear-lanceolate*, between linear and lance-shaped, as the leaves of Lavender; *linear-subulate*, between linear and awl-shaped, and so on of others.

Lip, either division of a bilabiate flower; also, the lower petal of an irregular flower.

Lobed, deeply divided into obtuse segments; as the leaves of Avens, Bryony, Celandine, Dandelion.

Lobulate, having small lobes.

Locular; a fruit is termed unilocular when it has one cell; bilocular, when it has two cells, and so on.

Lomentum, loment; a kind of legume falling in pieces when ripe.

Lorate, shaped like a thong or strap.

Lunate, shaped like a half-moon.

Lurid, of a colour between purple, yellowish-red, and grey.

Lyrate, lyre-shaped; divided transversely into several segments which are larger towards the extremity; as the leaves of Mustard, Avens, &c.

Lyrately-pinnate, pinnate in a lyrate manner.

M.

Male flowers or florets are those which contain only stamens.

Marcescent, withering, but not soon falling off.

Medulla, the pith of a plant.

Membranous, thin and semi-transparent, like membrane.

Midrib, the large vein which passes from the petiole to the apex of a leaf.

Monadelphous, having the filaments cohering into a tube.

Monandrous, having one stamen.

Moniliform, necklace-shaped.

Monocotyledonous, having but one seed-leaf or cotyledon.

Monœcious, having stamens only in one flower, and pistils only in another flower, on the same plant; as in Birch, Oak, Pine.

Monopetalous, having but one petal. The term is applied to a corolla, however much divided it may be, if the pieces will not come off separate without tearing.

Monophyllous, synonymous with *Monosepalous*.

Monosepalous, of one sepal; *gamosepalous* is sometimes substituted. It has a similar meaning to monopetalous, but refers to the calyx.

Mucronate, dagger-pointed; abruptly terminated by a hard sharp point; as the leaf of Cleavers, Fir, Herb-Robert.

Multifarious, very numerous; or arranged in many rows.

Multifid, cleft into many parts.

Multipartite, deeply divided into many parts.

Muricate, furnished with numerous, hard, short points.

N.

Naked, applied to stems without leaves, to flowers without a perianth, to leaves without hair or down, and to seeds which have no pericarp.

Napiform, turnip-shaped; having the figure of a depressed sphere; as the root of Aconite.

Navicular, boat-shaped.

Nectareous, } containing nectar, or honey-like juice.
Nectariferous, }

Nectarium, nectary; a small gland which secretes a nectareous juice; as at the base of the petals in Crowfoot.

Needle-shaped, see *Acerose*.

Nerved, marked with prominent veins.

Nerves, the strong longitudinal veins upon leaves.

Netted, reticulated.

Nodi, the swollen articulations or joints of a stem.

Nodose, having many nodi or knots.

Nucleus, the kernel of a nut.

Nut, a hard, dry, indehiscent pericarp, containing a single seed. See Gromwell, Ground Ivy, Mezereon, Yew.

O.

Ob, prefixed to words, signifies inversion; thus *ob-ovate* means inversely ovate, viz., with the broad end uppermost; *ob-cordate*, inversely heart-shaped; as the fruit of Brooklime, the petals of Cinquefoil, and of many Umbelliferæ.

Oblique, applied to the position of leaves when the margin points upwards and the apex horizontally; also applied to a stem which is neither in a perpendicular nor horizontal direction.

Oblong, at least three times longer than broad, and rather obtuse at each end; as the leaves of Horse-Radish. *Oblong-lanceolate*, between oblong and lanceolate; *oblong-sagittate*, between oblong and arrow-shaped, &c.

Obovate, inversely ovate; as the leaves of Bearberry, and the petals of Bramble. When joined by a hyphen to another word, signifies a figure between the two,—thus, *obovate-oblong*, between obovate and oblong; *obovate-lanceolate*, between obovate and lanceolate; *obovate-spatulate*, between obovate and spatula-shaped, as the leaves of Daisy.

Obsolete, scarcely visible; as the calyx of many Umbelliferous plants.

Obtuse, blunt at the end, not acute; as the leaves of Cowslip.

Octandrous, having eight stamens.

Operculate, covered with a lid.

Opposite, placed on opposite sides of some other part on the same plane. Thus, two leaves frequently proceed from opposite sides of the stem at the same height.

Orbicular, circular or spherical; *orbicular-ovate*, a figure between circular and ovate; *orbicular-reniform*, between round and kidney-shaped.

Orifice, an opening.

Ova, eggs; the seeds before they are impregnated by the pollen.

Oval, elliptical, and somewhat rounded at each end.

Ovary, germen; the hollow base of the pistil in which the ovules are contained, and which finally becomes the fruit.

Ovate, egg-shaped; having the outline of a longitudinal section of an egg, the broad end downwards; as the leaf of Adders-tongue, Bugle, Eyebright. *Ovate-lanceolate*, between ovate and lanceolate; *ovate-cordate*, between egg-shaped and heart-shaped; *ovate-globose*, between ovate and circular, &c.

Ovoid, egg-shaped; applied to a solid figure.

Ovula, } the same as ova; the unimpregnated seeds of the ovary or ger-
Ovules, } men.

P.

Palate, the mouth of a ringent flower.

Paleaceous, having chaffy scales, as the receptacle of many Syngenesious flowers.

Paleæ, the chaffy or membranous bracteæ or scales on the receptacle of some Syngenesious flowers; also the bracteæ between the glumes and the stamens of grasses.

Palmate, divided so as to represent a hand spread open; as the leaf of Aconite, the radical leaves of Crowfoot.

Panicle, a kind of inflorescence, in which the axis or main stem is branched, and the secondary divisions are greatly elongated and widely separated; as in St. John's Wort, and many of the grasses.

Paniculate, forming a panicle, or disposed in the manner of a panicle.

Papilionaceous, butterfly-shaped; applied to the flowers of Diadelphous plants, and those that bear legumes; as Broom, Rest-harrow.

Papillæ, small soft excrescences.

Papillose, covered with papillæ.

Pappus, the hair-like processes crowning the fruit of many Syngenesious plants, answering to the calyx of other plants; as in Chamomile, Coltsfoot, Dandelion.

Parenchyma, cellular tissue; as the pith of Elder.

Parasitical, growing on and receiving nutriment from another plant; as the Misseltoe.

Parietal, attached to the sides or walls of the ovary or capsule.

Parietes, the walls or sides of the capsule.

Parted, }
Partite, } divided, but not quite to the base; the calyx of Mullein is five-parted.

Patent, spreading; having a gradually outward or horizontal direction.

Pectinate, resembling the teeth of a comb.

Pedate, applied to leaves which are five to seven lobed, with the lower divisions again lobed; as the leaves of Bear's-foot, Black Hellebore.

Pedicel, the small foot-stalk of flowers; the partial peduncle.

Pedicellate, stalked, having a pedicel.

Peduncle, the common foot-stalk of a flower or flowers.

Pedunculate, standing on a peduncle; as the flowers of Avens and many others.

Pellicle, a thin skin which envelopes various seeds.

Peltate, applied to leaves when the petiole is fixed in the disk, and not as is usually the case, to the lower extremity.

Pencilled, resembling a camel-hair pencil.

Pendulous, drooping, hanging down.

Pentagonal, having five angles; as the capsule of Purging Flax.

Pentandrous, having five stamens.

Perennial, lasting many years; any plant whose root endures longer than two years, although the stem dies down to the ground, is said to be perennial.

Perfoliate, said of leaves when the stem passes through the base.

Perianth, the envelope which surrounds the stamens and pistil or interior organs of the flower. The term is most properly used when the calyx and corolla are so much alike that they cannot be distinguished; as in Colchicum, Yellow Flag, Garlic.

Pericarp, the seed-vessel.

Perigynous, growing upon some body that surrounds the ovary; that is, inserted in the calyx or on the disk which adheres to the calyx.

Perisperm, the same as *Albumen*.

Permanent, }
Persistent, } not falling off, as the calyx of several plants, and some leaves.

Personate, masked; applied to a bilabiate corolla, when the lips are closely pressed together; as in Toad-flax.

Petaloid, resembling petals; as the perianth of Colchicum, the stigmas of Yellow Flag, the sepals of Black Hellebore, the two outer sepals of Milkwort.

Petals, the leaves or divisions of a corolla.

Petiolar, of or belonging to the footstalks.

Petiolate, }
Petioled, } having footstalks, as the leaves of Nettle, and many other plants.

Petioles, footstalks of leaves.

Pilose, covered with short, weak, thin hairs; as the leaf of Carrot.

Pinnated, winged; divided into numerous smaller leaflets or pinnæ; as the leaves of Celandine, Cuckoo-flower, Elder, Valerian, Water-cress.

Pinnæ, the leaflets or little leaves of a pinnated leaf.

Pinnatifid; a leaf is said to be pinnatifid when it is divided nearly to the mid-rib, that is, not quite pinnate; as in Feverfew, Polypody, &c.

Pisiform, formed like a pea.

Pistil, the central part of a flower, consisting of three parts—the base or germen (ovary); the intermediate columnar body or style and the summit or stigma. The style is sometimes absent, and then the stigma is said to be sessile. There may be one or many pistils, and according to their number so are the *orders* of the Linnæan system in most of the classes.

Pistilliferous, containing pistils only; as the outer florets of Daisy.

Pith, medulla; the substance occupying the centre of a stem or shoot.

Placenta, that part of a seed-vessel to which the seeds are attached.

Plaited, folded like the plaits of a fan; as the corolla of Thorn-Apple.

Plane, flat, having a perfectly level surface; as the leaves of Yellow Flag.

Plano-convex, flat on one side, convex on the other.

Plumose, feathery.

Plumule, or Gemmule, the minute body situated between the cotyledons in the embryo of a seed.

Pod, see *Legume* and *Silique*.

Pollen, the pulverulent matter contained in the anthers of a flower, composed of globules containing the fecundating fluid.

Polyandrous, having more stamens than twenty inserted on the receptacle.

Polygamous, applied to plants which produce flowers with stamens only, pistils only, and both stamens and pistils, on the same individual, or on two or three distinct plants of the same species.

Polypetalous, having many petals.

Polyspermous, bearing many seeds.

Pome, a fleshy fruit, two or more celled, indehiscent, the seeds enclosed in dry cells; as the common Apple.

Pores, apertures in the cuticle of a leaf, &c., by which transpiration is effected; also small holes in the anther through which the pollen is ejected.

Pouch, a short, flat, broad seed-vessel, a silicle; also a little sack or bag at the base of some petals and sepals.

Præmorse, appearing as if bitten off.

Pressed, close, not spreading.

Prickles, rigid, sharp-pointed, conical bodies, capable of being easily detached from the part on which they grow, and thus differing from spines or thorns, which proceed from the woody fibre, and are persistent. Prickles are abundant on the Bramble, Rose, &c.

Prismatic, prism-shaped; having several longitudinal angles and intermediate flat faces.

Procumbent, spreading on the surface of the ground; as the stems of Bearberry, Chamomile, Periwinkle.

Prostrate, lying upon the ground, or other surface; as the stem of Pennyroyal.

Pubescence, down, short soft hairs.

Pubescent, covered with pubescence, as the stem of Hound's-tongue.

Punctate, dotted.

Pungent, having a hard sharp point ; as the leaves of Butcher's Broom and Juniper.

Putamen, the endocarp or stone of a drupe ; as in Cherry-Laurel.

Pyramidal, shaped like a pyramid ; broad at the base, gradually tapering upwards.

Pyxidium, a kind of fruit, one-celled, many-seeded, thin and dry, opening by a transverse incision, so that the upper part separates like a lid ; as in Pimpernel, &c.

Q.

Quadrangular, having four angles ; as the stem of Bugle, Cleavers, Ground Ivy, Lavender.

Quadrate, square. *Quadrate-oblong*, between square and oblong ; as the perianth of Sweet Flag.

Quadrifid, divided four times, or divided into four parts.

Quinary, arranged by fives.

Quinate, five together ; having five leaflets from the same point ; as the leaves of Cinquefoil.

Quincuncially, placed in the form of the letter V.

Quinquefid, divided into five.

R.

Raceme, a kind of inflorescence in which the axis or common stalk is simple, and each of the flowers is furnished with a stalk or pedicel ; as in Barberry, Black Currant, Cherry-Laurel, Melilot.

Racemose, disposed in racemes, or resembling a raceme.

Rachis, that part of the peduncle on which the flowers of grasses are arranged ; also the petiole and midrib of Ferns.

Radiant, *Radiating*, *Rayed*, } a compound flower is said to be so when the florets of the ray or circumference are long or spreading, and unlike those of the centre or disk ; as in Carrot, Coriander, &c. A stigma is said to be radiant when divided like the rays of a star ; as in Asarabacca and Poppy.

Radical, of or belonging to the root ; or proceeding from the root ; as the leaves of Buckbean, Coltsfoot, Daisy, Plantain.

Radicle, the root of an embryo ; also the rootlets or fibres of a root.

Radii, the spokes or divisions of an umbel.

Radius, the ray or circumference of a compound flower.

Ramenta, the little withered scales with which the stems of some plants, as ferns, are clothed.

Ramose, branched.

Raphe, in seeds, the channel of vessels which connects the chalaza with the hilum ; in umbelliferous plants, the line of junction of the two halves of the fruit.

Ray, see *Radius.*

Receptacle, the enlarged apex of the peduncle, which supports the organs of fructification. See Dandelion, &c.

Recess, the bay or sinus of lobed leaves.

Reclinate, leaning back.

Recurved, curved backwards.

Reflexed, bent back.

Reniform, kidney-shaped ; as the leaves of Asarabacca, Ground-Ivy. *Reniform-cordate*, between kidney and heart-shaped.

Repand, undulated and unequally dilated at the margin.

Resupinate, inverted in position, so that that which should be the summit becomes the base.

Reticulated, netted ; covered with lines or veins interwoven like the meshes of a net, as some leaves and seeds.

Retuse, appearing as if cut off transversely at the end, abruptly obtuse ; as the petals of Dill, the silicle of Fumitory.

Revolute, rolled back ; as the stigmas of Dandelion, the margins of the leaves of Rosemary.

Rhizoma, root-stock ; a creeping, thickened, subterranean stem, throwing out rootlets from the under side, and annually producing new plants ; as in Buckbean, Fern, Sweet Flag, Herb Paris.

Rhomboid, oval, a little angular in the middle ; as the scales of the cone of Fir. *Rhomboid-lanceolate*, between rhomboid and lanceolate ; and so on of other compounds.

Rib, the projecting vein of a leaf ; also the longitudinal prominences on the calyx of labiate plants.

Ridges, longitudinal elevations on the fruit of umbelliferous plants : there are five ridges on each *carpel*, three on the back, called *dorsal*, and one on each side at the edge, *lateral* or *marginal ;* these are named *primary*, but they are sometimes obliterated more or less ; there are occasionally four other small or secondary ridges, alternate with the former.

Rigid, stiff.

Rimose, having a longitudinal fissure or fissures.

Ringent, personate, gaping ; applied to a corolla divided into two lips ; as in Honeysuckle, Rosemary, &c.

Rooting, throwing out roots from the procumbent stem ; as in Brooklime, Water-cress.

Rotate, wheel-shaped ; a corolla is said to be rotate when the tube is very short and the limb flat ; as in Bitter-sweet, Brooklime, Elder, Holly.

Roundish, nearly round. *Roundish-obovate*, inversely ovate, but somewhat round. *Roundish-cordate*, heart-shaped though nearly round.

Rufous, reddish orange.

Rugose, wrinkled ; as the leaves of Cowslip, Foxglove, Horehound.

Runcinate, applied to leaves when they are irregularly lobed, the lobes gradually diminishing to the base and hooked back; as in Dandelion.

Runners, procumbent shoots, which root at their extremity.

S.

Saccate, bagged, having a bag or pouch.

Sagittate, shaped like the head of an arrow; as the leaves of Sorrel, and some anthers.

Salver-shaped, hypocrateriform; applied to a corolla, when the tube is long, narrow, and not dilated, and the limb flat; as in Cowslip, Periwinkle.

Samara, an indehiscent fruit, having a membranous margin or wing; as the so-called *Key* of the Ash, the fruit of Elm.

Sarcocarp, the fleshy part of a fruit under the epicarp.

Sarmenta, runners.

Scabrous, rough from little asperities; as the stem and leaves of Hop, the leaves of Mulberry, &c.

Scales, small processes resembling little leaves.

Scape, a stem which bears only flowers; as in Buckbean, Coltsfoot, Cowslip, Daisy.

Scariose, } membranous and dry.
Scarious, }

Scattered, disposed without regularity.

Scion, a young shoot.

Scolloped, crenated, marked with convex teeth at the margin.

Scutate, having the figure of the ancient round buckler.

Secund, unilateral, arranged on one side only.

Segments, parts of any thing.

Semi, half.

Seminal, of or belonging to the seed.

Sepals, the divisions or leaves of the calyx.

Sepalled, having sepals.

Septa, the partitions which divide the interior of a pericarp; the dissepiments.

Series, a row or train.

Serrate, } toothed like a saw; as the leaves of Buckthorn, Horse-Chestnut,
Serrated, } Nettle, &c.

Serratures, the teeth of a serrated leaf.

Serrulated, having fine serratures.

Sessile, sitting; destitute of a stalk; as the leaves of Honeysuckle, Mezereon, Pimpernel: and the pappus of the fruit of several *Compositæ*.

Setaceous, resembling a bristle; as the involucre of Hog's Fennel.

Setose, covered with bristles.

Sheath, the lower part of a leaf which embraces the stem.

Sheathing, surrounding the stem by the convolute base.

Silicle, a short, broad pod opening by two valves; as in Fumitory, Horseradish, Sauce Alone.

Silique, a long narrow pod; as in Cuckoo-flower, Mustard, Water-cress.

Simple, not divided or compound.

Sinuate, undulated; bending in and out; as the leaves of Henbane, Oak, &c. *Sinuate-toothed*, toothed in a sinuate manner.

Sinus, the bay or recess formed by the lobes of leaves.

Smooth, without hair or excrescences.

Solitary, growing singly; as the flowers of Deadly Nightshade, Pimpernel.

Sori, the patches of fructification on the back of the leaves of Ferns, &c.

Spadix, a flower-stalk which proceeds from a spathe; as in Arum.

Spathe, a broad sheathing leaf, enclosing the kind of inflorescence called a spadix; as in Arum.

Spatulate, oblong, with the lower end much attenuated; as the leaf of Daisy.

Spicate, resembling a spike; as the raceme of Mullein.

Spike, a collection of alternate sessile flowers upon a common stalk; as in Darnel.

Spikelets, little or secondary spikes; as in Darnel and other grasses.

Spine, a sharp persistent process issuing from the woody part of a plant; as in Buckthorn, Sloe, Holly.

Spinous, armed with spines; as the capsule of Thorn-Apple.

Sporules, minute reproductive organs of Cryptogamic plants, answering to the seed in perfect plants. See Fern.

Stamens, the small organs situated between the pistil and the corolla. They constitute the male apparatus of the flower, and are composed of a filament or slender thread tipped with the anther which contains the pollen or fertilizing matter.

Stellate, arranged in a star-like manner; as the leaves of Cleavers, Woodruff, &c., the pubescence of Lavender.

Stigma, the secreting summit of the style, the apex of the pistil.

Stipes, a stalk; the leaf-stalk of Ferns, &c.

Stipitate, having a stipe or stalk; as the pappus or seed-down of Lettuce.

Stipulate, furnished with stipulæ.

Stipulæ, } small starved leaves, often membranous, situated at the base
Stipules, } of a true leaf, usually one on each side; as in Agrimony, Mercury, Nettle, Tormentil.

Stolo, a sucker.

Stoloniferous, bearing suckers.

Striæ, slender streaks or ridges.

Striated, having striæ or small ridges; as the stem of Sorrel, &c.

Strigose, covered with small, erect, stiff hairs, swollen beneath; as the leaf of Bugloss.

Strobile, a cone.

Style, the little column which rises from the germen or ovary, and supports the stigma.

Sub, in composition signifies somewhat or nearly, as *sub-ovate*, somewhat ovate; *sub-globose*, nearly round; *sub-sessile*, nearly sessile; *sub-dentate*, somewhat toothed: *sub-cordate*, somewhat heart-shaped, as the leaves of Black Currant.

Subulate, awl-shaped; narrow, tapering into a fine point; as the filaments of Elder, Flax, Lily.

Succulent, fleshy and containing juice.

Suffruticose, somewhat shrubby.

Sulcate, furrowed.

Subtended, furnished with some other body at the base or beneath.

Superior; when the calyx, corolla, or stamens are situated above the germen or ovary, they are called superior; when the contrary is the case, the ovary is said to be superior, as in Foxglove; the radicle is called superior when placed at the end of the seed furthest from the hilum.

Supine, lying with the face upwards.

Supra-decompound, more than compound, doubly compound.

Suture, the line formed by the cohesion or union of two parts, usually applied to the fruit.

Syngenesious, having compound flowers, viz. many crowded florets, the anthers of which are united into a tube, through which the style passes.

T.

Tail, the long feathery appendage of some fruits.

Taper-pointed, having a long taper point.

Tap-root, the main root of a tree, which penetrates perpendicularly into the earth.

Tendrils, the curling twining supports or fulcra of some plants; as those which proceed from the axils of the leaves of Bryony.

Terete, cylindrical; round and long, as the stem of Fennel; also applied to the fruit of umbelliferous plants, when it presents nearly a circle on a transverse section.

Terminal, situated at the top or summit, as distinguished from lateral or axillary. Flowers or modes of Inflorescence are said to be terminal when they clothe the upper part of the stem, no leaves intervening.

Ternary, } arranged in threes, growing in threes; as the leaves of Avens,
Ternate, } Broom, Melilot, Tormentil.

Tessellated, variegated by squares, chequered.

Testa, the skin or outer tegument of a seed.

Tetradynamous, having six stamens, four long and two short.

Tetragonal, having four angles.

Tetrapetalous, having four petals.

Thalamus, receptacle; the summit of the flower-stalk which supports the ovary, and sometimes the calyx, corolla, and stamens.

Thallus, the part that bears the fructification in lichens.

Thecæ, the cases that contain the sporules of cryptogamous plants. See Fern.

Throat, the orifice of a flower.

Thyrse, a kind of dense panicle; as in Lilac, Buckbean.

Tomentose, covered with short, dense, rather stiff, whitish hairs or down.

Toothed, divided at the margin so as to resemble teeth; as the leaves of Cowslip, Eyebright, White Horehound, &c.

Tortuous, twisting irregularly; as the stem of Ivy.

Torus, synonymous with *Thalamus*.

Transverse, across in a horizontal direction.

Trapeziform, trapezium-shaped; having four edges, those which are opposite, not parallel.

Triandrous, having three stamens.

Triangular, having three acute angles with concave faces.

Trichotomous, branching in three directions.

Tricuspidate, having three points; as the outer florets of Elecampane.

Tridentate, having three teeth.

Trifoliate, having three leaflets.

Trifid, divided into three, but not quite to the base.

Trigonal, having three angles and three sides; as the capsule of Lily.

Trilocular, having three cells.

Tripartite, three-parted; as the leaf of Ground Pine.

Tripinnate, thrice pinnate; that is, the common petiole having several bipinnate leaflets.

Triquetrous, the same as triangular.

Triternate, thrice ternate; as the leaves of Alexanders.

Truncate, obtuse, blunt as if cut off; as the root of Daisy, the florets of Dandelion, &c.

Tube, the inferior cylindrical part of a monopetalous corolla.

Tuber, a fleshy subterranean bud, provided at the sides with latent buds, from which new plants are produced the succeeding year; as in Orchis.

Tuberculate, having knots or tubercles.

Tuberous, *Tuberiferous*, bearing tubers; as the root of Dropwort.

Tubular, forming a tube; as the calyx of Cowslip, Ground Ivy; the corolla of Honeysuckle; the florets of many Syngenesious plants.

Tunic, a coat; the covering of a seed or bulb.

Tunicated, having a tunic or coat.

Turbinate, top-shaped; inversely conical, with a contraction towards the point.

Two-edged, having two rather sharp edges; as the stem of an Iris.

U.

Umbel, that kind of inflorescence in which the peduncles or stalks are equal and spring from the same point; the stalks are called radii, and if these are again divided the umbel is denominated compound.

Umbellate, *Umbelliferous*, having flowers in umbels.

Umbellules, small, secondary, or partial umbels.

Umbilical, of or belonging to the umbilicus.

Umbilicate, having an umbilicus or little boss. Sometimes used as synonymous with *peltate*.

Umbilicus, hilum; the point by which the seed is attached to the placenta.

Umbonate, having a boss or projection in the centre, like the umbo of an ancient shield.

Unarmed, destitute of prickles, spines, or stings.

Uncinate, hooked.

Undulated, wavy, having an uneven, alternately concave and convex margin; as the leaves of Borage, Holly, &c.

Unequal, applied to petals and sepals which are not of the same size or shape; also to the two sides of a leaf which are not symmetrical.

Unguis, the claw or taper base of a petal, &c.

Unguiculate, having an unguis or claw.

Unifloral, bearing a single flower; as the peduncles of Flax.

Unilateral, one-sided, or turned to one side; as the flowers of Bugloss, &c.; the partial involucre or involucel of Fool's Parsley.

Unilocular, having one cell.

Unisexual, of one sex.

Urceolate, pitcher-shaped; roundish, contracted at the neck; as the corolla of Dodder, the calyx of Cherry-laurel.

Urceolus, a pitcher-shaped body.

Utricle, a little bottle or bladder.

V.

Valvate, } opening by or having valves.
Valved, }

Valves, the divisions or parts of a seed-vessel that separate at maturity; also applied to the glumes of Grasses, and the enlarged petals of the Dock genus.

Vascular, composed of tubes or vessels.

Vaulted, arched.

Veinless, without veins.

Velvety, covered with very dense, short, soft hairs.

Ventricose, inflated, bellying; as the lower part of the corolla of Foxglove.

Vermicular, having the appearance of a worm.

Vernal, belonging to the spring.

Versatile, swinging lightly on a stalk, so that the direction is changed by the slightest touch; as the anthers of Darnel and other grasses, Colchicum, Lily, &c.

Vertex, the extreme point.

Vertical, perpendicular.

Verticillate, disposed in a whorl.

Verticillastri, spurious whorls or cymes; as in Sage, &c.

Vesicles, hollow excrescences, resembling little bladders.

Vexillum, standard; the upper large petal of a papilionaceous flower.

Villous, shaggy, covered with long, weak, soft, loose hairs.

Violaceous, of the colour of a Violet.

Virescent, greenish.

Viscid, } clammy, adhesive.
Viscous, }

Vittæ, longitudinal canals or vessels containing an oily or resinous substance, formed beneath the channels in the coat of the fruit of umbelliferous plants. See Dill, Fennel, &c.

Viviparous, bearing young plants in the place of flowers and seed.

W.

Waved, } undulated; as the leaves of Bistort, White Poppy.
Wavy, }

Wedge-shaped, cuneate, inversely triangular; as the leaflets of Fumitory.

Whorl, a species of inflorescence in which the flowers are arranged round the stem at the same height; also applied to leaves or branches which grow round the stem in the same manner; as in Horse-tail, Woodruff.

Whorled, disposed in whorls.

Wing, a membranous border attached to some fruits and seeds, by which they are wafted through the air; also applied to the expansion on the stems of some plants, occasioned by the decurrent leaves; as in Comfrey.

Winged, having a wing or wings; a stem with decurrent leaves is said to be winged; as Mullein.

Woolly, covered with long, dense, curled, matted hairs; as the stem and leaves of Mullein.

Wrinkled. See *Rugose*.

Z.

Zigzag, bending at slight angles, first in one direction and then in another; as the stem of Yellow Flag.

No. II.

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No. III.

RULES FOR GATHERING, DRYING, AND PRESERVING PLANTS, AND FOR MAKING THE VARIOUS PHARMACEUTICAL PREPARATIONS.

Vegetables are to be gathered from those places where they grow spontaneously. The best and strongest specimens should be chosen, and such as grow in open and high situations are in general to be preferred to those that occur in moist and shady places. They should be gathered in a dry season, and when they are not wet with rain or dew. They are to be collected every year, and any which have been longer kept are to be thrown away.

" Roots, for the most part, are to be dug up before their stem or leaves shoot forth." This is the rule generally given, but there is some difficulty in following it, unless the locality of the plant be well known. It would be nearly as difficult in many instances to discover the root of which we are in search, late in autumn or early in winter, when the stem and leaves are withered, supposing it to be equally vigorous then as in spring, (which is doubtful). There is reason to believe, however, that early in spring, when the first leaves of a plant are unfolded, the qualities of the root are not materially affected. Even then a previous knowledge of the plant is requisite, but it is easily recognised by the practised eye from the character of the leaves merely.

" Barks are to be collected at that season when they are most easily separated from the wood." That is in spring, when the active principles circulating in the vessels of the bark are most abundant and energetic.

Leaves are to be gathered after the flowers have expanded or before the seeds are mature.

Tops are to be cut when the flowers are in bud or have but just opened.

Flowers are to be gathered when just unfolded.

Seeds are to be collected when they are ripe and before they fall. They should be preserved in their pericarps or seed-vessels.

THE DRYING AND PRESERVATION OF VEGETABLES.

Vegetables intended to be preserved, are, soon after they are gathered, to be spread out in thin layers on willow-baskets or tin plates in a drying room kept quite dark and well ventilated; and should be exposed to a heat varying from 110° to 140° Fahr. (according to their texture and qualities). They should be turned at intervals, and should be kept exposed to the same degree of heat for seven or eight hours, or until the leaves readily crumble between the fingers. The retention of their green colour is one of the best indications of the process having been properly conducted. The properties of some plants, as of Thorn-apple, are best preserved by partially drying them, to effect the evaporation of their watery particles, and then packing them very closely in tubs or boxes and submitting them to fermentation, (in the same manner as Tobacco is prepared for the market,) they are then to be taken out and thoroughly dried.

When the process of drying is completed, they should either be packed up tightly in bundles between several sheets of paper, and kept in drawers in a dry warm situation; or they may be preserved in oil jars closely covered and kept in a dry place.

Flowers particularly require to be dried quickly and with great attention.

Roots which are required to be preserved fresh, should be buried in dry sand. Otherwise, they may be submitted to a gentle heat; if thick and strong, they may be cut in pieces.

Pulverization. After the dried leaves have been well pounded in a mortar, the coarser particles are to be separated from the finer by means of a sieve of hair or gauze, and these powdered again. It is better to take as much of the dried plant as is required for current use, and reduce it to powder, than to keep the whole quantity in a pulverized state.

Expression. Fresh plants are submitted to this operation, for the purpose of obtaining their juices. They must first be well cleansed from all impurities, and then being cut small they are to be bruised in a Wedgewood mortar; then put into a bag or hair-cloth and placed in a screw press of wood. The pressure should be gentle at first, and gradually increased.

Depuration. The cleansing of vegetable juices from their feculencies is generally performed by allowing them to stand till they subside, then decanting the clear juice. The antiscorbutic juices and some others, are immediately clarified by pouring into them a small quantity of vegetable acid, such as lemon-juice.

PREPARATIONS.

CONFECTIONS OR CONSERVES.

The intention of these preparations is to preserve as nearly as possible, unaltered, the virtues of recent vegetables, and to prevent the decomposition to which they would otherwise be subject. Refined or loaf sugar should be employed, and should be finely powdered and sifted before it is brought in contact with the vegetable matter. The parts of the plant to be used should be quite fresh and clean; the leaves (as of scurvy-grass and wood-sorrel) must be picked from their stalks, and the flowers must be deprived of their calyx and peduncle, except in labiate flowers, (such as lavender,) in which the calyx must not be removed. Moreover, in roses, the heel or claw,—the small white end of the petals—must be cut off and thown away. They must then be carefully pounded in a Wedgewood mortar, till they are reduced to a pulpy mass, when the sugar should be added and the whole beaten together till they are perfectly blended. The proportion of sugar employed is, in general, thrice the weight of the vegetable substance; but if required for immediate use, twice the weight is sufficient. Confections should be put into earthen jars, carefully tied over with a piece of wet bladder, and over that a covering of leather or stout paper.

DECOCTIONS.

Decoctions are solutions of the active constituents of vegetables obtained by boiling. By this mode of preparation we obtain not merely the principles soluble in water, but those which are only to be dissolved by continued heat. The process is chiefly used for mucilaginous and bitter substances, and is improper when the active principles of a plant are volatile, or consist chiefly of extractive matter. The substances employed should be previously bruised or sliced, and should be kept from the access of air as much as possible. The operation should be performed over a clear fire in a covered vessel; soft and filtered water should be employed, and the ebullition should not be violent. Woods, barks and roots require most boiling, and these ought in general to be boiled down to one half; when these articles are combined with leaves and stalks, the latter should be added towards the end of the process. Decoctions should be strained while hot, and ought not to be made in large quantities, as they will seldom keep for forty-eight hours.

The proportion for decoctions is, for the generality of vegetable substances, one ounce to a pint and a half of water, which should be reduced to a pint. Where other proportions are required, they are noticed in this work under the respective articles.

DISTILLED WATERS.

By distillation with water the odorous and volatile principles of plants are to a considerable extent brought over. Waters are to be distilled from dried plants in general, because fresh plants are not always to be procured; but if the latter are used it must be in double the weight. Delicate odorous flowers, however, should always be distilled in the recent state. The first thing to be attended to in distillation is the proportion of water necessary to prevent the plants from burning. The general rule is to put nearly twice as much water in the still as you intend to draw off; or as much as will be sufficient after the quantity required shall have been drawn off, as will prevent the vegetables from being scorched; a little proof spirit is usually added.

The proportion of herbs or flowers required to afford a gallon of distilled fluid will vary greatly according to the nature and qualities of the substance: of delicate flowers two-thirds the weight will be required, and of strong aromatic herbs not more than one-eighth; and of aromatic seeds about one-tenth. The plants to be distilled should be allowed to macerate in the water for a few hours; and some of the tougher vegetables require a much longer time. Care should be taken that the water and the ingredients do not occupy more than two-thirds of the still; and the fire should be quickly raised, and kept up during the whole operation.

Distilled waters when recently prepared have a disagreeable empyreumatic odour, commonly called "*smelling of the still*," which they lose by exposure to the air as long as any of the unpleasant odour remains; but they should immediately afterwards be put into glass vessels and closely corked or stopped.

After being long kept, many distilled waters become ropy and sour; to prevent which a little proof spirit is generally directed to be added to them, but it is preferable to re-distil them, after which they will keep good for several years.

Common distilled water is sometimes required for pharmaceutical preparations. It may be obtained by means of the common still or by the more simple method of having a pewter tube fitted to the spout of a common tea-kettle, which may be kept cool, when in use, by being wrapped round with wet rags.

DISTILLED SPIRITS.

The directions for distilling spirits are nearly the same as for the waters: as much water must be put into the still as will prevent the vegetables from burning, and the quantity of spirit intended to be drawn off should then be added. The general proportion is a pound and a half of the vegetable substance to a gallon of spirit, drawing off a gallon. Proof or distilled spirit is to be employed, because alcohol, in its rectified state, is more volatile than many of the essential oils, which therefore do not rise with it in distillation.

Mr. Waller observes, that those who wish to have their cordials very agreeable to the taste, should use good French brandy; it should only be employed, however, when the plant to be distilled is not of a very volatile nature.

EXTRACTS.

Extracts are formed by evaporating solutions of vegetable substances, until a firm tenacious mass is obtained. They ought to contain all the active principles of the vegetable from which they are prepared, but too frequently the volatile matter is dissipated and the more fixed parts decomposed by the process. An extract prepared from an infusion or decoction is termed an *aqueous* or *watery extract;* from a tincture, a *spirituous* or *alcoholic extract.* When water is employed, the substance should be coarsely powdered, or if tough, bruised.

The following may be observed as a general rule for the preparation of extracts:—The vegetable matter should be boiled in eight times its weight of water down to one half; the liquor is then to be pressed out carefully through cloth, and when the fæces have subsided, to be filtered without being allowed to grow cold. The evaporation of the fluid is best performed in a broad shallow vessel, for the broader the evaporating surface is, the more quickly will the process be performed, and the quicker it is performed the better. This, however, must by no means be done by increasing the heat, for in no stage of the process must the temperature exceed that of boiling water; therefore it must be accomplished by means of a *water bath*, that is, by placing the evaporating vessel in another containing boiling water. This is a tedious process, but it is the only one that can be depended on, as an increased heat would carry off all the active principles of the plant. The process may be assisted by shaking the vessel, and stirring up the fluid from time to time. When the matter begins to thicken, great care is to be taken to prevent it from burning, and a constant stirring with a wooden spoon becomes necessary to the end of the process, which is when the matter acquires the consistence of thick honey. The water used for the bath is best saturated with salt.

The inspissated juices of plants are also called extracts, and are usually prepared as follows:—The leaves are to be bruised in a marble mortar, sprinkling a little water on them; the juice is then to be expressed as it is, without being cleansed, and evaporated as above to a proper consistence.

The following method of preparing narcotic extracts is recommended by Mr. Battley, (London Med. Repos. vol. iv.) "The fresh plants are to be bruised and pressed, and the juice from them passed through a fine hair sieve and immediately placed on the fire. Some time before it is raised to the boiling temperature, a quantity of green-coloured matter begins to float on the surface, which must be carefully removed as it rises by means of a thin perforated tin dish, and preserved. The boiling is to be continued until rather more than one half the fluid is evaporated, when the decoction is to be put into a conical pan, and suffered to stand until cold. A large precipitation of dark-green feculent matter will be discovered, from which the supernatant fluid is to be poured off and again exposed to evaporation until one half of it is consumed, when it is to stand for precipitation. The remaining fluid is now to be suffered to boil till it acquires the consistence of syrup, when the matter which had been collected at the commencement by filtration and precipitation is to be mixed with it, and placed in a metallic pan in a water bath, and further evaporated till of the consistence of an extract. The operator must now give his constant attention; and although it is not necessary that the matter should be constantly stirred, it should never be suffered to stick or become hard on the sides of the pan, as thereby it loses its green colour and medicinal virtues."

When alcohol is employed in the preparation of extracts, a tincture of the substance is first obtained, and the evaporation is usually conducted in a still, which should be heated by steam, and the spirit thus drawn off; the process may then be finished as directed for aqueous extracts.

Both kinds, when quite cold, should be put into pots, and preserved from the external air as much as possible by means of oiled bladder, and should be securely tied over and kept in a dry place.

INFUSIONS.

Infusions are solutions of vegetable matter, obtained by maceration either in cold or in boiling water. Infusions by hot water are generally stronger, but sometimes not so grateful as those made by cold. The vegetable to be acted on, if recent, must be cut or bruised, and if dry, coarsely powdered only ; the ingredients should be placed in a pitcher-shaped vessel which can be closely covered, and the proper quantity of soft boiling water should be poured over them. A metallic tea-pot is a convenient vessel for the purpose. The maceration may continue for half an hour, an hour, or several hours, according to the nature and texture of the article, and sometimes the vessel should be placed near the fire ; the infusion should then be strained through tow or fine linen. Infusions are taken warm, except occasionally those of rosemary, balm, mint, &c. The general proportion for infusions may be considered as half an ounce to a pint of water.

SYRUPS.

In forming syrups, we first make a decoction or infusion of the plant of a sufficient strength, and then boil it up with twice its weight of loaf sugar. This operation should be performed over a slow clear fire, when the articles should be allowed to boil very gently, skimming off the scum carefully as it rises. If the syrup should require clarifying, it is easily done by beating up to a froth the white of an egg, with three or four ounces of water, and boiling the mixture for a few seconds with the syrup, when the impurities will all rise in a scum, which can be very readily separated.

Syrups should be preserved in a place the temperature of which never exceeds 55° *Fahr.*

TINCTURES.

This term is applied to spirituous solutions of vegetable substances in a dried state. Proof spirit is generally employed, but rectified spirit or alcohol is occasionally used. The ingredients are to be macerated in the spirit in a temperature not exceeding 80°, and should be prepared in closely-stopped glass vessels, which should be frequently shaken during the process. The usual period for maceration is fourteen days, at the end of which time the tinctures should be poured off, the residuary ingredients squeezed, and the whole filtered through blotting paper, and kept in well-corked bottles. The general proportion is, two ounces of vegetable matter to a pint of proof spirit. For stomachic and tonic tinctures, French brandy is to be preferred.

WINES.

Wine is a good menstruum for several vegetable substances, but it is liable to the objection of inequality of strength; and when medicated, is subject to the fermentative process. *Medicated wines* were favourite remedies with some of the old physicians. They are prepared in nearly the same manner as tinctures, to which we refer the reader.

No. IV.

WEIGHTS AND MEASURES, ETC.

APOTHECARIES' WEIGHT.

The pound lb. contains 12 ounces.
ounce ℥ —— 8 drachms.
drachm ʒ —— 3 scruples.
scruple ℈ —— 20 grains.

Pound.		Ounces.		Drachms.		Scruples.		grains.
1	contains	12	or	96	or	228	or	5760
		1	contains	8	or	24	or	480
				1	contains	3	or	60
						1	contains	20

MEASURE OF FLUIDS.

The gallon .... C contains 8 pints.
pint ...... O —— 20 fluid ounces.
fluid ounces f℥ —— 8 fluid drachms.
fluid drachm fʒ —— 60 minims.
minim .... ♏

Gallon.		Pints.		Ounces.		Drachms.		Minims.
1	contains	8	or	160	or	1280	or	76800
		1	contains	20	or	160	or	9600
				1	contains	8	or	480
						1	contains	60

A table-spoonful is equal to f℥ss, or half a fluid ounce.
A desert-spoonful .... fʒijss, or two drachms and a half.
A tea-spoonful...... .... fʒj, or one fluid drachm.
A wine-glassful....... .. f℥iss, or one ounce and a half.

The degrees of heat are to be measured by Fahrenheit's thermometer. By a boiling heat, is intended that which is marked by the two hundred and twelfth degree: by a gentle heat, any degree between ninety and one hundred.

A water bath is made when any article contained in its own vessel is exposed either to hot water or the vapour of boiling water.

A sand bath is made of sand gradually made hot, in which any article contained in its proper vessel is placed.

DOSES PROPER FOR DIFFERENT AGES.

The doses mentioned in this work are those proper for an adult; we therefore subjoin the following table, by which, the quantity for an adult being known, the dose suitable for younger persons may be ascertained.

For an adult, suppose the dose to be One, as one drachm.

A person under 20 years will require only	two-thirds.
14	one-half.
7	one-third.
4	one-fourth.
3	one-sixth.
2	one-eighth.
1	one-twelfth.

No. V.

CLASSES OF INDIGENOUS PLANTS CONSIDERED AS AGENTS OF THE MATERIA MEDICA.

The following arrangement of Medicinal Plants according to their mode of operation is given instead of an alphabetical list of diseases, and will (provided the disease and its causes are accurately understood) assist the reader in selecting appropriate remedies; it will also indicate those plants which may be substituted for others, and will enable the prescriber to combine those agents which produce similar effects, thereby increasing the efficiency of the remedy. The limits and design of this work would not admit of an explanation or dictionary of Medical Terms, which, to be practically useful, must be something more than a mere list of synonymes; such, however, may be found in "Hooper's Medical Dictionary," and a few similar works.

ANODYNE.—See Narcotic.

ANTHELMINTICS.

Remedies which expel worms from the intestinal canal.

Bears-foot
Bryony
Buckbean
Elecampane
Fern
Feverfew
Garlic
Horehound
Onion
Polypody
Rue
St. John's Wort
Tansy
Wormwood
Walnut.

ANTISPASMODICS.

Substances which allay spasm or inordinate muscular contraction, and assuage pain without producing insensibility. They are connected on one hand with Narcotics, and on the other with Excitants.

Avens
Burnet-Saxifrage
Catmint
Chamomile
Cuckoo-flower
Goosefoot
Ground-Pine
Lavender
Lily of the Valley
Lime
Misseltoe ?
Mullein
Mugwort
Nightshade (Deadly)
Pennyroyal
Peony
Poppy
Saffron
Southernwood
Valerian.

ASTRINGENTS.

Substances which produce contraction and condensation of the fibres of the human body. Chiefly used in hemorrhages and diarrhœa.

Agrimony
Alkanet
Avens
Barberry
Bearberry
Bistort
Blue-Bottle ?
Bramble
Buckbean
Bugle
Cinquefoil
Comfrey
Dropwort
Elm
Eyebright
Golden-Rod
Gromwell
Harts-tongue
Herb-Robert
Horse-Chestnut
Horse-tail
Hounds-tongue
Houseleek
Lady's Mantle
Madder
Meadow-sweet
Oak
Peony
Periwinkle
Plantain
Rose (Dog)
Rose (Red)
Sage
Sloe
Speedwell
Thistle (Lady's)
Thyme
Tormentil
Vervain
Walnut
Willow
Yarrow
Yellow Flag.

CARMINATIVES.

Aromatic Stimulants which dispel flatulence or wind from the Alimentary Canal.

Alexanders
Angelica
Anise
Calamint
Caraway
Catmint
Chamomile
Coriander
Cumin
Dill
Fennel
Flag (Sweet)
Juniper
Marjoram
Masterwort
Melilot
Peppermint
Pennyroyal
Rue
Rosemary
Sage
Tansy
Thyme.

CATHARTICS.

Medicines which accelerate the evacuation from the intestines or occasion purging. They may be divided into—

Aperients (mild Purgatives or Eccoprotics).

Asparagus
Birch
Borage
Chervil
Cleavers
Currant
Dandelion
Dodder
Fennel
Flax
Fumitory
Liquorice
Mallow
Parsley
Pine (resin)
Polypody
Sloe (flowers)
Strawberry
Succory
Water-Dock
Violet.

Drastic Purgatives.

Aconite
Asarabacca
Bears-foot
Bindweed
Broom
Bryony
Buckthorn
Colchicum
Elder
Hellebore
Hemp-Agrimony
Mezereon
Purging Flax
Spurge-Laurel
Stavesacre
Toad-flax.

CEPHALICS.

Medicines which relieve disorders of the head. The title is nearly obsolete, as the plants to which it refers, are either aromatic stimulants or such as possess a degree of narcotic property.

Asarabacca
Betony
Bugloss
Calamint
Catmint
Clove-Pink
Cowslip
Eyebright ?
Lily of the Valley
Lime
Pimpernel
Marjoram
Lavender
Saffron
Sage
Thyme
Valerian.

CORROBORANTS.—See Tonics.

DEMULCENTS.

Substances which, by their mild and viscid qualities, lubricate the surfaces to which they are applied, defend them from acrid matter, and diminish their vital tension.

Bear's-breech
Beet
Bugloss
Comfrey
Flax
Gromwell
Liquorice
Mallow
Maidenhair
Orchis
Violet.

DEOBSTRUENTS.

Medicines which remove obstructions. This is an heterogeneous class, and is scarcely acknowledged by modern writers on the Materia Medica. It includes, for the most part, *Purgatives*, and those plants which contain a bitter and slightly excitant principle.

Aconite
Agrimony
Arum
Asparagus
Betony
Bitter-sweet

Birch
Broom
Bryony
Buckbean
Burdock
Butcher's Broom
Celandine
Centaury
Chervil
Columbine
Daisy
Dandelion
Dodder
Elder
Elecampane
Elm
Eryngo
Feverfew
Figwort
Fumitory
Germander
Ground Ivy
Ground Pine
Hart's tongue
Hellebore
Herb-Robert
Hop
Horehound
Horse-radish
Milkwort
Mugwort
Mustard
Periwinkle
Peony
Rest-harrow
Rue
Speedwell
St. John's Wort
Toad-flax
Tansy
Thistle (Lady's)
Thyme
Walnut
Water-dock
Wormwood.

DIAPHORETICS.

Medicines which increase or facilitate perspiration. When they have this property in a high degree they are denominated *Sudorifics.*

Aconite
Angelica
Arum
Balm
Betony
Birch
Bitter-sweet
Borage
Burdock
Celandine
Clove Pink
Columbine
Coriander
Elder
Garlic
Germander
Herb Paris ?
Hog's-Fennel
Honeysuckle
Mezereon
Masterwort
Meadow-sweet
Nightshade
Pimpernel
Poppy
Rosemary
Rue
Tansy
Thyme
Valerian
Woodruff.

DIURETICS.

Medicines which increase the urinary discharge.

Aconite
Alexanders
Asparagus
Bearberry
Birthwort
Biting Persicaria
Bitter-sweet
Broom
Buckbean
Burdock
Burnet-Saxifrage
Butcher's-broom
Calamint
Carrot
Celandine
Chervil
Cleavers
Colchicum
Columbine
Cuckoo-flower
Currant
Dandelion
Dead Nettle
Elder
Elecampane
Elm
Eryngo
Fennel
Feverfew
Fir
Flax
Foxglove
Golden-Rod
Ground Ivy
Ground Pine
Hedge-mustard
Hog's-Fennel
Honeysuckle
Hop
Horse-radish
Horse-tail
Juniper
Lettuce
Madder
Milkwort
Nettle
Onion
Parsley
Pine
Rest-harrow
Sauce-alone
Scurvy grass
Southernwood
Strawberry
Stone-crop
Tansy
Toad-flax
Valerian
Woodruff.

EMETICS.

Substances which excite vomiting.

Asarabacca
Chamomile
Colchicum
Crowfoot
Foxglove
Hemp-Agrimony
Herb Paris
Hellebore
Mustard
Spurge Laurel
Stone-crop
Violet
Walnut.

EMMENAGOGUES.

Medicines which promote the menstrual discharge. Nearly allied to *Deobstruents.*

Balm
Birthwort
Bryony
Calamint
Catmint
Foxglove
Goosefoot
Hellebore
Hog's-Fennel
Horehound
Madder
Masterwort
Pennyroyal
Rue
Tansy
Valerian
Walnut
Water-Dropwort ?
Wormwood.

EMOLLIENTS.

Closely allied to *Demulcents*, but usually employed externally.

Bear's-breech
Beet
Fenugreek
Flax
Lily
Mallow
Melilot
Mullein
Onion.

ERRHINES.

Substances which by direct application to the pituitary membrane occasion a discharge from the nostrils of mucous or serous fluid.

Asarabacca
Beet
Betony
Lavender
Lily of the Valley
Marjoram
Rosemary
Thyme
Yarrow
Yellow Flag.

EXCITANTS OR STIMULANTS.

Substances that powerfully augment the actions of the different organs of the body, by a direct impulse on the sensibility and irritability of the part to which they are applied.

Anise
Arum
Betony
Birthwoot
Biting Persicaria
Brooklime
Burnet-Saxifrage
Calamint
Clove-Pink
Coriander
Cuckoo-flower
Dill
Elecampane
Eryngo
Fennel
Flag (sweet)
Foxglove
Garlic
Horse-radish
Hyssop
Lavender
Lily of the Valley
Marjoram
Mint
Mustard
Onion
Pennyroyal
Pine (resin)
Poppy
Rosemary
Rue
Saffron
Scurvy-grass
Thorn-apple
Thyme
Yarrow.

EXPECTORANTS (Pectorals).

Medicines which are supposed to facilitate the excretion of mucus and fluids from the lungs and trachea. Chiefly used in coughs and asthma.

Arum
Betony
Birthwort
Borage ?
Bugloss
Calamint
Coltsfoot
Comfrey
Elecampane
Eryngo
Garlic
Hedge-Mustard
Hog's-Fennel
Horehound (White)
Hyssop
Liquorice
Maidenhair
Marsh-Mallow
Milkwort
Mullein
Polypody
Thorn-apple.

LITHONTRIPTICS.

Medicines considered capable of dissolving calculous or gravelly concretions in the kidneys or bladder. It is questionable whether any substances have this power; but the vegetable acids, astringents, tonics, and alkalies, such as the salt (carbonate of potass) obtained from the ashes of Broom, Wormwood, &c., have apparently the property of preventing the formation of calculus; hence such medicines are called Antilithics.

Agrimony
Bear-berry
Burdock
Centaury
Garlic
Hyssop
Onion
Wood-Sorrel
Wormwood.

NARCOTICS. (Anodynes or Hypnotics.)

Medicines which in a moderate dose produce a temporary excitement, followed by more or less depression, and by sleep or somnolency.

⁂ Those with a † prefixed are merely *Anodyne* or *Hypnotic*, that is, slightly Narcotic.

Aconite
Bitter-sweet
Colchicum
†Cowslip
†Elder
†Figwort
Foxglove
Hemlock
Henbane.
Herb-Paris
†Hop
Hound's-tongue
Lettuce
†Lily of the Valley
†Lime
†Mullein
Nightshade (Deadly)
†Peony
Poppy
Saffron
Thorn-apple
Valerian
†Violet
Walnut
Water-Hemlock
†Yarrow
Yew.

NERVINES.—See Excitants and Cephalics.

PURGATIVES.—See Cathartics.

REFRIGERANTS.—(Cooling Medicines.)

Medicines which diminish the morbid heat of the body.

Barberry
Borage
Currant
Houseleek
Mulberry
Sloe
Sorrel
Strawberry
Wood-Sorrel.

RUBEFACIENTS.

Stimulating or acrid substances which redden the skin by exciting moderate inflammation of the part to which they are applied.

- Arum
- Biting Persicaria
- Fir (resin)
- Garlic
- Mezereon
- Mustard
- Nettle (stinging)
- Onion
- Pine (resin)
- Spurge-Laurel.

SIALOGOGUES.

Substances which increase the salivary discharge.

- Burnet-Saxifrage
- Flag (Sweet)
- Horse-radish
- Masterwort
- Mezereon
- Spurge Laurel.

STERNUTATORIES.—See Errhines.

STIMULANTS.—See Excitants.

STOMACHICS.—See Tonics and Excitants.

SUDORIFICS.—See Diaphoretics.

SUPPURATIVES.

Substances producing inflammation, like *Rubefacients*, but which terminates in small pustules which suppurate.

- Pine (resin)
- Lily
- Mezereon.

TONICS.

Medicinal agents which gradually restore the tone and vigour of the body when it is relaxed or enfeebled.

- Agrimony
- Angelica
- Avens
- Bear-berry
- Buckbean
- Centaury
- Chamomile
- Coltsfoot
- Elm
- Fern
- Flag (Sweet)
- Fumitory
- Germander
- Hemp-Agrimony
- Holly
- Hop
- Horehound
- Horse-chestnut
- Hyssop
- Mugwort
- Oak
- Periwinkle ?
- Rose (Red)
- Sage
- Speedwell
- St. John's Wort
- Tansy
- Thistle (Lady's)
- Willow
- Wormwood.

VESICANTS.

Substances having the same action as *Rubefacients*, but in a more energetic degree, causing an effusion of serum between the cuticle and true skin, hence producing what are commonly called *Blisters*.

- Crowfoot
- Mustard.

VERMIFUGE.—See Anthelmintic.

No. VI.

SYNOPTICAL TABLE OF THE PROPERTIES AND USES OF BRITISH MEDICINAL PLANTS.

An asterisk (*) after the name of any disease, indicates that the remedy proposed is particularly deserving of attention—an interrogation (?) indicates a doubt.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Aconite or Monk's-hood.	Aconitum Napellus.	Leaves and root.	Narcotic, excitant, sudorific, deobstruent.	Rheumatism *; scrofula; scirrhus; palsy; intermittents; nodes; nervous head-ache; *externally*, tic-douloureux *.
Adder's-tongue.	Ophioglossum vulgatum.	Leaves.	Astringent.	Sore throat; *externally*, ulcers; bruises.
Agrimony.	Agrimonia Eupatoria.	Leaves.	Tonic, astringent, deobstruent, diuretic.	Liver-complaints *; obstructions of the viscera; cachexia*; cutaneous eruptions; passive hemorrhages.
Alexanders.	Smyrnium Olusatrum.	Seeds and root.	Carminative, emmenagogue, diuretic.	Flatulence *; colic; obstructed menses; *root*, strangury; gravel.
Alkanet.	Anchusa tinctoria.	Root.	Astringent.	Used for colouring ointments, &c.
Angelica.	Angelica Archangelica.	Root and herb.	Aromatic, tonic, carminative.	Flatulence *; dyspepsia *; hysteria; low fevers, and agues.
Arum.	Arum maculatum.	Tuber.	Excitant, deobstruent, expectorant.	Asthma *; rheumatism; chlorosis; jaundice; obstructions of the viscera; intermittents; dropsy *; loss of appetite.
Asarabacca.	Asarum europæum.	Root and leaves.	Emetic, cathartic, diaphoretic, errhine.	Headache*; drowsiness; giddiness; catarrh; paralysis of the tongue; chronic ophthalmia.
Asparagus.	Asparagus officinalis.	Young stems.	Diuretic, deobstruent, sedative?	Obstructions of the liver; jaundice; palpitations of the heart.
Avens.	Geum urbanum.	Root.	Astringent, tonic; diaphoretic.	Intermittent fevers *; flatulent colic; general debility *; diarrhœa; dysentery.
Balm.	Melissa officinalis.	Herb.	Excitant, tonic, deobstruent, diaphoretic.	Hysteria *; head-ache; indigestion; hypochondriasis; obstructed menses; palpitations; febrile diseases *.
Barberry.	Berberis vulgaris.	Fruit, bark.	Refrigerant, antiseptic; *bark* astringent, tonic.	Fevers *; inflammatory diseases; heat of urine; scorbutus; sore-throat; *bark*, diarrhœa; dysentery; visceral obstructions *.
Bearberry.	Arbutus Uva-ursi.	Leaves.	Tonic, astringent, diuretic.	Chronic diarrhœa and dysentery *; leucorrhœa; diabetes; stone and gravel; phthisis.
Bear's-breech.	Acanthus mollis.	Leaves and root.	Demulcent, emollient, sub-astringent.	Intestinal pains; pulmonary affections; diarrhœa.
Bear's-foot.	Helleborus fœtidus.	Leaves.	Anthelmintic.	Worms.
Beet.	Beta vulgaris.	Leaves.	Laxative, emollient.	Used to dress issues, blisters, &c.
Betony.	Betonica officinalis.	Leaves.	Tonic ? cephalic, deobstruent, errhine.	Debility of stomach; gout; bilious head-aches; vertigo; hemicrania.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Bindweed.	Convolvulus sepium.	Root, (gum res.)	Cathartic.	Dropsy*; worms; hypochondriasis; costiveness.
Birch.	Betula alba.	Sap.	Aperient, diaphoretic.	Diseases of the urinary organs; cutaneous eruptions *.
Birthwort.	Aristolochia Clematitis.	Root.	Excitant, diuretic, emmenagogue, deobstruent.	Chlorosis *; obstructed menses; gout; asthma; cachexia *.
Bistort.	Polygonum Bistorta.	Root.	Astringent, tonic.	Diarrhœa *; dysentery; hemorrhage; intermittent fevers; fluor albus *; *externally*, tooth-ache; scorbutic gums; sore-throat.
Biting Persicaria.	Polygonum Hydropiper.	Leaves.	Excitant, diuretic.	Dropsy; jaundice? gravel; *externally*, ulcers; bruises; tooth-ache.
Bitter-sweet.	Solanum Dulcamara.	Twigs.	Diuretic, sudorific, deobstruent, anodyne.	Dropsy; humoral asthma; rheumatism; arthritis; jaundice; scrofula; leprosy *; *externally*, cutaneous eruptions *; hard tumours, contusions, &c.
Blue-bottle.	Centaurea Cyanus.	Flowers.	Sub-astringent?	As a colouring material; formerly used as a lotion for weak and inflamed eyes.
Borage.	Borago officinalis.	Leaves & flowers.	Excitant, diaphoretic, pectoral?	Low spirits; obstructions of the viscera; disorders of the chest; hysteria?
Bramble.	Rubus fruticosus.	Leaves.	Astringent.	Hemorrhages; leucorrhœa; *externally*, tetters; ulcers.
Brooklime.	Veronica Beccabunga.	Herb.	Antiscorbutic, excitant.	Scurvy; cutaneous affections *.
Broom.	Cytisus Scoparius.	Tops.	Diuretic, cathartic, deobstruent.	Dropsy *; diseases of the liver and spleen; *externally*, tetters.
Bryony.	Bryonia dioica.	Root.	Cathartic, diuretic, deobstruent, anthelmintic.	Hypochondriasis; obstructions of the viscera *; epilepsy; dropsy; rheumatism; asthma; worms; *externally*, tumours.
Buckbean.	Menyanthes trifoliata.	Leaves.	Tonic, diuretic, cathartic, deobstruent.	Intermittents; dyspepsia; scrofula; chronic rheumatism *; gout; cachexia; worms; obstructed menses *; cutaneous diseases.
Buckthorn.	Rhamnus catharticus.	Berries, bark.	Cathartic; *bark* tonic, astringent.	Dropsy *; hypochondriasis; gout; cachexia; *bark*, in intermittents and general debility.
Bugle.	Ajuga reptans.	Herb.	Astringent, pectoral?	Hemorrhages; dysentery; consumption?
Bugloss.	Anchusa officinalis.	Herb, root.	Pectoral, demulcent.	Hypochondriasis? pleurisy? dysentery.
Burdock.	Arctium Lappa.	Root.	Sudorific, diuretic, deobstruent.	Gout *; syphilis; rheumatism *; hypochondriasis; dropsy; nephritis; *externally*, indolent tumours; ulcers.
Burnet Saxifrage.	Pimpinella Saxifraga.	Root.	Excitant, diuretic, emmenagogue.	Hysteria *; asthma; dyspnœa; catarrhs.
Butcher's-broom.	Ruscus aculeatus.	Root.	Tonic, emmenagogue, diuretic.	Dropsy; jaundice; scrofula; obstructions of the viscera *; ardor urinæ.
Calamint.	Calamintha officinalis.	Flowering tops.	Excitant, carminative, emmenagogue, diuretic.	Hysteria; flatulence *; obstructed menses *; asthma; *externally*, rheumatic pains.
Caraway.	Carum Carui.	Fruit.	Carminative.	Colic *; indigestion; hysteria; tertian agues; *externally*, ear and tooth-ache.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Carrot.	Daucus Carota.	Fruit, root.	Carminative, emmenagogue; *root* diuretic, deobstruent.	Hysteria; flatulence; *root*, in stone and gravel; strangury; *externally*, foul ulcers; cancer*.
Catmint.	Nepeta Cataria.	Flowering tops.	Excitant, cephalic, emmenagogue.	Chlorosis*; hysteria; obstructed menses*; nervous disorders.
Celandine.	Chelidonium majus.	Herb (juice), root.	Deobstruent, diuretic, diaphoretic.	Dropsy; jaundice; indurations of the liver and mesentery*; calculus; *externally*, cutaneous diseases*; warts; specks on the eyes.
Centaury.	Erythræa Centaurium.	Flowering tops.	Tonic, stomachic, deobstruent.	Indigestion*; gout; intermittents; cachexia*; obstructions; *externally*, atonic ulcers.
Chamomile.	Anthemis nobilis.	Flowers.	Tonic, carminative, emmenagogue, discutient, anodyne.	Intermittents; indigestion*; colic*; hysteria; calculus; nephritis; bilious affections; *externally*, painful tumours*; ulcers; bruises, &c.
Chestnut (Horse).	Æsculus Hippocastanum.	Bark.	Astringent, tonic.	Intermittents*; hemorrhages; fluor albus.
Chervil.	Anthriscus Cerefolium.	Herb.	Aperient, diuretic, deobstruent.	Stone and gravel; visceral obstructions; cutaneous affections; *externally*, bruises; hæmorrhoids.
Cinquefoil.	Potentilla reptans.	Root.	Astringent.	Diarrhœa; dysentery; hemorrhages; intermittents.
Clary.	Salvia pratensis.	Herb.	Tonic, emmenagogue.	Hysteria; suppression of the menses.
Cleavers.	Galium Aparine.	Herb (juice).	Aperient, diuretic, antiscorbutic.	Dropsy; scurvy; nephritis; gravel; *externally*, cancer*; foul ulcers.
Clove-Pink.	Dianthus Caryophyllus.	Flowers.	Aromatic, diaphoretic.	Low fevers; nervous disorders; exanthemata; head-ache.
Colchicum.	Colchicum autumnale.	Cormus, seeds.	Narcotic, diuretic, cathartic, excitant.	Gout*; rheumatism*; dropsy; inflammatory affections.
Coltsfoot.	Tussilago Farfara.	Flowers.	Expectorant, demulcent.	Coughs*; asthma; phthisis; hectic diarrhœas*; cutaneous diseases.
Columbine.	Aquilegia vulgaris.	Flowers, seeds.	Deobstruent, diaphoretic, diuretic.	Measles and other exanthemata; jaundice; *externally*, scabies*; ulcers of the mouth.
Comfrey.	Symphytum officinale.	Root.	Astringent, demulcent, emollient.	Dysentery*; hemorrhages; phthisis; coughs; nephritis; fluor albus; heat of urine.
Coriander.	Coriandrum sativum.	Fruit.	Carminative, diaphoretic.	Flatulence; colic*; hysteria.
Cowslip.	Primula veris.	Flowers, root.	Cephalic, anodyne, *root* excitant.	Head-ache; watchfulness*; vertigo; paralysis? *root*, as an errhine.
Crowfoot.	Ranunculus acris.	Leaves.	Rubefacient, epispastic.	*Externally*, in deep-seated pains*; intermittents; leprous eruptions.
Cuckoo flower.	Cardamine pratensis.	Flowers.	Excitant, diaphoretic, antispasmodic.	Spasms; chorea; epilepsy*; scorbutus; obstructions of the liver, &c.
Cumin.	Cuminum Cyminum.	Fruit.	Carminative, diuretic, emmenagogue.	Flatulence*; colic; hysteria; difficult menstruation*.
Currant (Black).	Ribes nigrum.	Berries, leaves.	Deobstruent, aperient, diuretic, anodyne.	Sore throat and quinsy*; dysentery; exanthemata*; *leaves*, in suppression of urine.
Daisy.	Bellis perennis.	Flowers, root.	Deobstruent? astringent, excitant.	Obstructions of the viscera; agues? scrofula; *externally*, contusions.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Dandelion.	Leontodon Taraxacum.	Root.	Deobstruent, diuretic, aperient.	Chronic inflammation and incipient scirrhus of the liver and spleen*; jaundice; incipient phthisis*; scrofula; hypochondriasis; dropsy.
Darnel.	Lolium temulentum.	Seeds.	Detersive.	*Externally*, in disorders of the skin.
Dill.	Anethum graveolens.	Fruit.	Excitant, carminative, anodyne.	Flatulent colic*; hiccough; vomiting; sleeplessness.
Dodder.	Cuscuta europœa.	Herb.	Deobstruent, aperient.	Obstructions of the viscera; jaundice; cutaneous eruptions.
Dropwort.	Spiræa Filipendula.	Herb, root.	Astringent, tonic.	Dysentery; fluor albus; scrofula; stone.
Elder.	Sambucus nigra.	Flowers, berries, leaves and bark.	Diaphoretic, aperient, anodyne; *leaves and bark* cathartic, deobstruent.	Catarrhs; sore throat; fevers and inflammatory affections*; rheumatism; exanthemata; *bark*, in dropsy and hæmorrhoids.
Elecampane.	Inula Helenium.	Root.	Tonic, expectorant, diuretic, sudorific.	Indigestion*; colic; paralysis; coughs; asthma; dropsies; scabies.
Elm.	Ulmus campestris.	Bark.	Tonic, alterative, diuretic, diaphoretic.	Cutaneous affections*; scrofula; rheumatism.
Eryngo.	Eryngium maritimum.	Root.	Pectoral, excitant, restorative.	Affections of the chest; chronic coughs; general debility.
Eyebright.	Euphrasia officinalis.	Herb.	Astringent, tonic.	Vertigo; weakness of sight; ophthalmia?
Fennel.	Fœniculum vulgare.	Fruit, herb, root.	Carminative, stomachic; *root* aperient, diuretic.	Indigestion*; flatulence; obstructed menses; intermittents; scarcity of milk? *root*, in asthma; exanthemata; gravel.
Fenugreek.	Trigonella Fœnum-græcum.	Seeds.	Emollient, discutient, anodyne.	Diarrhœa; dysentery; colics; *externally*, indolent tumours*; aphthous ulcers.
Fern.	Aspidium Filix mas.	Rhizoma.	Anthelmintic, tonic, detersive.	Worms*; visceral obstructions; rickets; *externally*, burns.
Feverfew.	Pyrethrum Parthenium.	Flowering tops.	Tonic, deobstruent, emmenagogue.	Intermittents*; difficult labours and after-pains; hysteria; chlorosis*; worms; *externally*, in fomentations.
Figwort.	Scrophularia aquatica.	Leaves.	Deobstruent, diaphoretic, anodyne.	Scrofula; cutaneous eruptions; *externally*, eruptions; tumours.
Fir.	Abies communis.	Bark (resin), young shoots.	Rubefacient, diuretic; *shoots* antiscorbutic, diuretic, sudorific.	*Externally*, in catarrh; dyspnœa; lumbago; rheumatism*; *shoots*, in suppression of urine*; gout and scurvy.
Flag (sweet).	Acorus Calamus.	Rhizoma.	Tonic, stomachic, carminative.	Dyspepsia*; flatulence; colic; head-aches; intermittents*; malignant fevers; dysentery.
Flag (yellow).	Iris pseud-Acorus.	Rhizoma.	Astringent when *dried*; when *fresh* cathartic, errhine.	Vomiting of blood; dysentery; diarrhœa; *fresh root*, in dropsy and worm cases; and as an *errhine* in head-ache, &c.
Flax (common.	Linum usitatissimum.	Seeds.	Demulcent, emollient, expectorant.	Strangury*; heat of urine*; gonorrhœa; cough; pleurisy; hœmoptysis; *externally*, inflammatory and painful affections; burns*.
Flax (purging.)	Linum catharticum.	Herb.	Cathartic.	Dropsies; affections of the kidneys and bladder.
Fool's Parsley.	Æthusa cynapium.	......	Poisonous.	Not used.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Foxglove.	Digitalis purpurea.	Leaves & seeds.	Excitant and sedative, diuretic.	Inflammatory diseases *; phthisis; dropsies *; hemorrhages; scrofula; palpitation; chronic rheumatism.
Fumitory.	Fumaria officinalis.	Herb.	Deobstruent, tonic, diaphoretic, detersive.	Scorbutus *; cachexia *; indigestion; jaundice; hypochondriasis; cutaneous disorders; *externally*, eruptions *; ulcers.
Garlic.	Allium sativum.	Bulb.	Excitant, expectorant, diuretic, diaphoretic, anthelmintic; *externally* rubefacient, maturating.	Dyspepsia *; hysteria; asthma *; dropsy; hooping-cough *; calculus; intermittents; worms; *externally*, tumours; burns; ear-ache *.
Germander (Wall).	Teucrium Chamœdrys.	Herb.	Tonic, deobstruent, sudorific.	Visceral obstructions; intermittents *; jaundice; asthma; scrofula *; gout; rheumatism.
Germander (Water).	Teucrium Scordium.	Herb.	Tonic, antiseptic, diaphoretic.	Dyspepsia *; putrid fevers; gangrene; chronic fluxes; coughs; *externally*, ulcers.
Golden-rod.	Solidago Virgaurea.	Herb.	Astringent, diuretic.	Stone and gravel; diarrhœa; dysentery; *externally*, indolent ulcers.
Goosefoot.	Chenopodium olidum.	Herb.	Antispasmodic, emmenagogue.	Hysteria; suppressed menses *.
Gromwell.	Lithospermum officinale.	Seeds and root.	Demulcent, diuretic.	Gravel; strangury; heat of urine; gonorrhœa.
Ground Ivy.	Glechoma hederacea.	Herb.	Tonic, stomachic, diuretic, expectorant.	Hypochondriasis; dyspepsia; pulmonary affections *; cough; head-ache.
Ground-Pine.	Ajuga Chamœdrys.	Herb.	Deobstruent, diuretic, antispasmodic.	Rheumatism; gout; intermittent fevers; nervous disorders *; obstructed menses; scurvy.
Hart's-tongue.	Scolopodendrium vulgare.	Leaves.	Astringent, deobstruent.	Hœmoptysis; diarrhœa; cachexia; convulsive disorders ?
Hedge-Mustard.	Sisymbrium officinale.	Herb, seeds.	Expectorant, diuretic.	Hoarseness *; coughs; asthma; torpid state of the bowels.
Hedge Nettle, (Dead-Nettle).	Lamium purpureum.	Herb.	Diuretic, emmenagogue, detersive.	Nephritis; fluor albus; visceral obstructions; *externally*, foul ulcers; swellings.
Hellebore (black).	Helleborus niger.	Root.	Drastic cathartic, emmenagogue, errhine.	Mania *; melancholy; dropsy; suppression of the menses *; epilepsy; rheumatism; as an *errhine*, in chronic diseases of the eyes *.
Hemlock.	Conium maculatum.	Leaves, fruit.	Narcotic and sedative, resolvent.	Scirrhus *; cancer; rheumatism; jaundice; scrofula; phthisis *; protracted cough; *externally*, scrofulous and glandular swellings; cancer *; tumours.
Hemp-Agrimony.	Eupatorium cannabinum.	Leaves, root.	Tonic, deobstruent; *root* cathartic, emetic.	Intermittent fevers *; cachexia; suppression of the menses; *root*, in dropsy *; œdema.
Henbane.	Hyoscyamus niger.	Leaves.	Narcotic, anodyne, antispasmodic.	Epilepsy *; hysteria; palpitation; mania; scirrhus; hœmoptysis; rheumatism *; pyrosis *; *externally*, inflammatory and glandular swellings; cancerous sores; hæmorrhoids.
Herb-Paris.	Paris quadrifolia.	Root.	Narcotic, emetic, diaphoretic.	Commencement of fevers and phthisis; dysentery? asthma? cough; hooping-cough; convulsions.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Herb-Robert.	Geranium robertianum.	Herb.	Deobstruent, astringent, repellent, anodyne?	Alvine fluxes; calculous and gravelly complaints; jaundice? intermittents? *externally*, cancer; tumours; ulcers.
Hog's Fennel.	Peucedanum officinale.	Root.	Deobstruent, expectorant, detersive.	Visceral obstructions *; asthma; chronic coughs; hysteria; suppression of the menses; *externally*, leprous and other cutaneous eruptions *.
Holly.	Ilex aquifolium.	Leaves.	Febrifuge, tonic.	Intermittent fevers *; liver complaints.
Honeysuckle.	Lonicera Periclymenum.	Flowers, bark.	Antispasmodic; *bark* sudorific, diuretic.	Asthma; nervous coughs; *bark*, in gout; rheumatism; syphilis; cutaneous affections.
Hop.	Humulus Lupulus.	Strobiles.	Narcotic, anodyne, tonic, diuretic.	Gout; rheumatism *; dyspepsia*; hypochondriasis; nephritis; *externally*, in the sleeplessness of delirious fever *; cancerous ulcers; rheumatic pains; bruises.
Horehound (White).	Marrubium vulgare.	Herb.	Expectorant, tonic, deobstruent, diuretic.	Hysteria; pituitous asthma; chronic coughs *; cachexia *; obstructed menses; worms; obstinate costiveness.
Horehound (Black).	Ballota nigra.	Herb.	Deobstruent, emmenagogue.	Hysteria; fluor albus; hypochondriasis; anorexia; gout; *externally*, hard tumours; ulcers.
Horse-Radish.	Cochlearia Armoracia.	Root.	Excitant, diuretic, expectorant.	Scurvy; rheumatism *; dropsy; gravel; dyspepsia; asthma *; *locally*, in hoarseness and paralysis.
Horse-tail.	Equisetum arvense.	Herb.	Astringent, diuretic.	Dysentery *; spitting of blood; uterine hemorrhages; ulceration of kidneys; sequel of scarlet fever and erysipelas; *externally*, indolent ulcers.
Hounds-tongue.	Cynoglossum officinale.	Herb, root.	Narcotic, anodyne, astringent.	Catarrh; coughs *; diarrhœa; fluor albus; hemorrhages; *externally*, tumours and ulcers.
House-leek.	Sempervivum tectorum.	Herb.	Refrigerant, astringent.	Fevers; dysentery; sore throat*; *externally*, inflamed surfaces; burns; aphthæ *.
Hyssop.	Hyssopus officinalis.	Herb.	Tonic, stomachic, expectorant.	Dyspepsia *; sickness; gout; chronic coughs and humoral asthma; *externally*, bruises.
Ivy.	Hedera Helix.	Leaves, berries, resin.	*Leaves* tonic and detersive; *berries* purgative, diaphoretic; *resin* tonic.	*Leaves*, in the atrophy of infants and externally to ulcers and eruptions; *berries*, in fever, rheumatism, and exanthemata; *resin*, in atonic diseases.
Juniper.	Juniperus communis.	Berries, wood.	Diuretic, carminative; *wood* sudorific.	Dropsies *; catarrhs of the lungs and bladder *; calculus; asthma; flatulence; suppression of the menses; *wood*, in rheumatism.
Lady's Mantle.	Alchemilla vulgaris.	Leaves and root.	Astringent, sophisticant?	Hemorrhages; alvine fluxes; fluor albus.
Lavender.	Lavandula Spica.	Flowering tops.	Excitant, cephalic, errhine.	Stomach complaints; hysteria; faintings *; paralysis; headaches.
Laurel, (Cherry.)	Prunus Lauro-cerasus.	Leaves.	Sedative, diuretic.	Pulmonary complaints; spasmodic coughs; asthma; melancholy; agues.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Lettuce.	Lactuca sativa.	Herb (juice.)	Narcotic, diaphoretic.	Coughs *; phthisis and all painful affections *; want of sleep; hypochondriasis; satyriasis.
Lily (white).	Lilium album.	Flowers, bulb.	Anodyne, emmenagogue? *bulb* suppurative.	Epilepsy? *bulb* externally, to inflammatory tumours and abscesses *.
Lily of the Valley.	Convallaria majalis.	Flowers.	Anodyne, antispasmodic, errhine.	Epilepsy; apoplexy; spasmodic and nervous disorders *; as an errhine in paralysis of the tongue, deafness, &c.
Lime.	Tilia europœa.	Flowers, innerbark.	Anodyne, antispasmodic; *bark* demulcent.	Epilepsy; apoplexy; vertigo *; spasms; coughs; sleeplessness; *bark*, to inflammatory surfaces, burns, &c.
Liquorice.	Glycyrrhiza glabra.	Root.	Demulcent, pectoral.	Catarrh and coughs *; heat of urine; nephritis; strangury; diarrhœa.
Madder.	Rubia tinctorum.	Root.	Astringent, emmenagogue.	Chlorosis and difficult menstruation; jaundice; dysentery.
Maidenhair.	Adiantum Capillus-veneris.	Herb.	Tonic, demulcent, pectoral.	Obstructions of the viscera; catarrh; cough, and irritation of the lungs and air-passages *.
Marjoram.	Origanum vulgare.	Flowering tops.	Excitant, carminative, resolvent.	Nervous complaints *; hysteria; flatulence and debility of stomach; spasmodic coughs; *externally*, in obstructions; rheumatic affections; indolent tumours.
Marsh-Mallow.	Althœa officinalis.	Root.	Demulcent, lubricating, aperient.	Pulmonary and intestinal affections *; tickling coughs *; dysentery; heat of urine; calculus; *externally*, in emollient fomentations, &c.
Masterwort.	Peucedanum Ostruthium.	Root.	Carminative, sudorific, emmenagogue, diuretic.	Colic; flatulence *; intermittents; paralysis; hysteria *; obstinate coughs; asthma*; obstructed menses.
Meadow-Sweet.	Spirœa Ulmaria.	Root, flowers.	Astringent, *flowers*, diaphoretic.	Diarrhœa; dysentery; fevers; *flowers*, in languishing eruptive disorders *.
Melilot.	Melilotus officinalis.	Flowering tops, seeds.	Carminative, anodyne, *seeds* emollient.	Colic *; dysentery; catarrh *; *externally*, to tumours; pleuritic and gouty pains.
Mercury.	Mercurialis perennis.	....	Poisonous.	Not used.
Mezereon.	Daphne Mezereum.	Bark.	Stimulant, diaphoretic, vesicatory.	Chronic rheumatism; syphilis; lepra and scrofulous swellings *; paralysis of the tongue; *externally*, in chronic local pains *.
Milkwort.	Polygala vulgaris.	Herb and root.	Tonic, expectorant.	Pleurisy; phthisis; marasmus; coughs *.
Mint (Pepper).	Mentha Piperita.	Herb.	Stomachic, carminative.	Cramp and wind in the stomach *; hysteria; nervous vomitings; flatulent colic *; anorexia; suppression of the menses.
Misseltoe.	Viscum album.	Herb.	Deobstruent, antispasmodic, detersive.	Epilepsy *; chorea; convulsive diseases; hysteria; pleuritis; viscid pituita in the stomach and bowels.
Sorrel.	Artemisia vulgaris.	Flowering tops.	Tonic, deobstruent, emmenagogue.	Indigestion; agues; obstructed menses *; hysteria; epilepsy; *externally*, in anodyne fomentations.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Mulberry.	Morus nigra.	Fruit, bark.	Refrigerant, laxative; *bark* anthelmintic.	Fevers *; thirst; sore-throat; *bark*, in worm cases.
Mullein.	Verbascum Thapsus.	Leaves.	Anodyne, pectoral, emollient.	Hemorrhages; diarrhœa; coughs; phthisis? heat of urine; tenesmus; piles *; *externally*, as a resolvent *.
Mustard.	Sinapis nigra.	Seeds.	Stimulant, diuretic, emetic, rubefacient.	Dyspepsia *; torpidity of the bowels *; viscid pituita; rheumatism; hypochondriasis; dropsy; *externally*, apoplexy; paralysis; lethargy.
Nettle.	Urtica dioica.	Herb.	Astringent, diuretic.	Hemorrhages; flooding; phthisis? gravel and stone; *externally*, paralysis; lethargy.
Night-shade (Deadly).	Atropa Belladonna.	Leaves & root.	Narcotic, diaphoretic, diuretic, repellent.	Palsy*; epilepsy; chorea; tic-douloureux *; cachexia; rheumatism; gout; obstinate intermittents; hooping-cough *; scarlet fever; amaurosis; *externally*, cancerous sores; neuralgia *.
Oak.	Quercus Robur.	Bark.	Astringent, tonic.	Intermittents; hemorrhages*; alvine fluxes*; fluor albus*; general debility; snuffles of infants; *externally*, inflammatory complaints of the mouth and throat *; ulcers; fluor albus.
Onion.	Allium Cepa.	Bulb.	Excitant, diuretic, diaphoretic, maturating.	Catarrh of the lungs and bladder *; dropsy; asthma; coughs; calculous cases; *externally*, tumours; burns; ear-ache *; deafness.
Orchis.	Orchis mascula.	Tuber.	Demulcent, incrassating, nutrient.	Dysentery; strangury; nephritis; marasmus; seminal weakness? symptomatic fevers.
Parsley.	Petroselinum sativum.	Root, leaves.	Diuretic, aperient; *leaves* tonic, resolutive.	Suppression of urine; gravel; visceral obstructions; *leaves*, in intermittents *; *externally*, to tumours; stings of insects, &c.
Pennyroyal.	Mentha Pulegium.	Herb.	Excitant, carminative, emmenagogue, expectorant.	Hysterical and nervous affections*; dyspepsia; obstructed menses *; convulsive cough; hoarseness *.
Peony.	Pœonia officinalis.	Root.	Anodyne, antispasmodic, emmenagogue.	Epilepsy; vertigo; convulsive diseases *; nightmare; suppressed menses?
Periwinkle.	Vinca minor.	Herb.	Astringent, tonic.	Hemorrhages; diarrhœa, and other fluxes; hemorrhoids; phthisis? *externally*, in gargles.
Pimpernel.	Anagallis arvensis.	Herb.	Deobstruent, diaphoretic.	Melancholy; obstructions of the viscera *; hydrophobia? epilepsy; phthisis?
Pine.	Pinus sylvestris.	Bark (turpentine, tar, resin).	*Turpentine*, stimulant, diuretic, sudorific, anthelmintic; *tar* and *resin*, excitant, detergent.	*Turpentine*, in rheumatism *, lumbago, leucorrhœa, hemorrhages, worms *, and externally to burns; *tar*, in cutaneous affections; *resin*, in stimulating plasters.
Plantain.	Plantago major.	Herb.	Astringent, diuretic?	Diarrhœa; hemorrhages; ague; diseases of the kidneys? *externally*, ulcers.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Polypody.	Polypodium vulgare.	Rhizoma.	Deobstruent, purgative.	Visceral obstructions *; hypochondriasis; viscid mucus of the intestines; epilepsy; worms; rachitis.
Poppy (Red).	Papaver Rheas.	Petals, unripe capsules.	Anodyne, diaphoretic.	Erysipelas? pleurisy; convulsive diseases; coughs *.
Poppy (White).	Papaver somniferum.	Capsules (inspissated juice or *opium.*)	Narcotic, stimulant, diaphoretic, sedative, antispasmodic.	To procure sleep *, and allay pain and irritation *; convulsive and spasmodic diseases*; typhus; diarrhœa; dysentery; intermittents; cholera; pyrosis.
Rest-harrow.	Ononis arvensis.	Root.	Deobstruent, diuretic, demulcent.	Obstructions of the viscera; jaundice? calculus; suppression of urine; cachexia; chlorosis; sarcocele?
Rose (Dog).	Rosa canina.	Fruit.	Refrigerant.	Febrile disorders; coughs.
Rose (Red).	Rosa gallica.	Petals.	Astringent, tonic.	Diarrhœa; hæmoptysis; leucorrhœa; chronic catarrh *; phthisis? *externally*, sore-throat *; inflamed eyes.
Rosemary.	Rosmarinus officinalis.	Flowering tops.	Excitant, stomachic, tonic.	Nervous disorders *; hysteria; fainting; epilepsy; head-aches *; fluor albus; chlorosis; asthma; chronic coughs; *externally*, to paralytic limbs, atonic tumours, &c.
Rue.	Ruta graveolens.	Herb.	Excitant, deobstruent, sudorific, emmenagogue.	Epilepsy; hysteria; flatulent colic *; convulsive diseases *; obstructed menstruation; worms; headache.
Saffron.	Crocus sativus.	Stigmata.	Anodyne, excitant, exhilarant, antispasmodic, diaphoretic.	Spasmodic and nervous affections *; drowsiness; fainting; hysteria *; asthma; chronic coughs; nervous vomitings *; typhoid fevers *; atonic gout; obstructed menses; exanthemata.
Sage.	Salvia officinalis.	Herb.	Tonic, nervine, stomachic, carminative.	Debilities of the stomach and intestines *; nervous languor; night sweats *; epilepsy; vertigo; hypochondriasis; hysteria; fluor albus; *externally*, relaxation of the uvula; ulcers of the mouth; swellings; bruises.
Sauce-alone.	Erysimum Alliaria.	Herb.	Diuretic, diaphoretic, expectorant.	Nephritic complaints; asthma; rheumatism *; scurvy; *externally*, foul and gangrenous ulcers.
Scurvy-grass.	Cochlearia officinalis.	Herb.	Excitant, antiscorbutic, diuretic.	Rheumatism; paralysis; cachexia; scurvy *; dropsies *; chronic catarrh; amenorrhœa; *externally*, scorbutic ulcers; cutaneous eruptions.
Sloe.	Prunus spinosa.	Fruit, bark, flower.	*Fruit* astringent, refrigerant; *bark* tonic; *flowers* laxative.	Diarrhœa *; hemorrhages; *externally*, enlarged tonsils and relaxed uvula; *bark*, in intermittents *; fluor albus; calculus? *flowers*, as a laxative in costiveness, &c.
Sorrel.	Rumex acetosa.	Herb.	Refrigerating, subastringent, diuretic.	Fevers *; loosenesses; scurvy; cutaneous eruptions; calculus?

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Southern-wood.	Artemisia Abrotanum.	Herb.	Tonic, stomachic, diuretic, anthelmintic.	Hysteria; hypochondriasis; dyspepsia; uterine obstructions; worms; *externally*, painful affections; eruptions; gangrene.
Speedwell.	Veronica officinalis.	Herb.	Astringent, tonic.	Diarrhœa; cachexia *; gout; diseases of the kidneys and gravel? chronic coughs; *externally*, ulcers; cutaneous affections.
Spurge-Laurel.	Daphne Laureola.	....	Acrid; (Poisonous.)	
St. John's Wort.	Hypericum perforatum.	Flowering tops.	Tonic, diuretic, deobstruent.	Hœmoptysis; nephritis; visceral obstructions *; hypochondriasis; suppression of urine *; worms; *externally*, painful swellings; ulcers.
Stavesacre.	Delphinium Staphisagria.	Seeds.	Sialagogue, cathartic, emetic.	Dropsy; paralysis; asthma? *externally*, tooth-ache; cutaneous affections; vermin *.
Stone-crop.	Sedum acre.	Herb.	Deobstruent, diuretic, emetic, rubefacient.	Dropsy *; scurvy; intermittents; epilepsy; *externally*, scorbutic ulcers; deep-seated pains.
Strawberry.	Fragaria vesca.	Fruit.	Refrigerant, diluent, aperient.	Fevers; calculus; gout *; phthisis; exanthemata.
Succory.	Cichorium Intybus.	Leaves & root.	Tonic, aperient.	Cachexia *; hypochondriasis *; jaundice; hectic; intermittents; bilious fevers.
Tansy.	Tanacetum vulgare.	Herb.	Tonic, stomachic, sudorific, emmenagogue, anthelmintic.	Intermittents; gout; chlorosis *; obstructed menses; indigestion *; colic; worms *; *externally*, in anodyne fomentations.
Thistle (Lady's).	Carduus Marianus.	Herb and seeds.	Tonic? diaphoretic; *seeds* diuretic, demulcent.	Visceral obstructions; pleurisy; jaundice; fluor albus? intermittents? *seeds*, in dropsy; nephritis; catarrhs.
Thorn-apple.	Datura Stramoninm.	Herb and seeds.	Narcotic, anodyne, excitant, antispasmodic.	Convulsive diseases; mania; epilepsy; severe chronic pains *; rheumatism *; asthma *; cancer; *externally*, hæmorrhoids, burns.
Thyme.	Thymus Serpyllum.	Herb.	Excitant, stomachic, cephalic, diuretic.	Nervous affections *; hysteria; head-aches; giddiness; flatulence *; nightmare; obstructed menses.
Toad-flax.	Linaria vulgaris.	Herb.	Cathartic, deobstruent, diuretic.	Dropsy *; obstructions of the liver, &c.; hypochondriasis; *externally*, piles; ulcers; cutaneous affections.
Tormentil.	Potentilla Tormentilla.	Root.	Astringent, diuretic.	Diarrhœa *; dysentery; hemorrhages; intermittents *; indigestion; loss of appetite; *externally*, ulcers; spongy gums; warts.
Valerian.	Valeriana officinalis.	Root.	Antispasmodic, tonic, emmenagogue, diaphoretic.	Hysteria *; epilepsy *; chorea; vertigo; hemicrania; hypochondriasis *; chlorosis; fevers; worms.
Vervain.	Verbena officinalis.	Herb.	Astringent.	Scrofula? chronic head-ache; agues; *externally*, sore-throat; inflamed eyes; ulcers.
Violet.	Viola odorata.	Flowers, root, seeds.	Anodyne, laxative; *root* emetic and purgative; *seeds* emollient.	Costiveness of children *; irritating coughs; nervous and convulsive diseases? *root*, in the onset of fevers, dysentery, &c.; *seeds*, in heat of urine, and gravel.

English name.	Latin name.	Part used.	Properties.	Diseases in which used.
Walnut.	Juglans regia.	Rind of fruit, kernel (*oil*), bark.	Astringent, tonic; *oil* demulcent, detersive; *bark* emetic.	Dysentery; indigestion; worms; intermittents; sore-throat; *oil* in pulmonary complaints and worms; and *externally*, to cutaneous affection.
Water-cress.	Nasturtium officinale.	Herb.	Antiscorbutic, diuretic.	Scurvy; obstructions of the viscera and bladder.
Water-Dock.	Rumex Hydrolapathum.	Root.	Deobstruent, purgative and tonic, detersive.	Scorbutic affections; obstructions of the viscera; depraved digestion; cutaneous diseases *; *externally*, cutaneous affections; ulcers; diseased gums; looseness of the teeth.
Water-Dropwort.	Œnanthe crocata.	......	Poisonous.	Not used.
Water-Hemlock.	Cicuta virosa.	Root.	Narcotic, detersive. (Poisonous.)	*Externally*, lumbago; rheumatism; herpes; bubo.
Water-Parsnep.	Sium nodiflorum.	Herb.	Antiscorbutic, deobstruent, diuretic.	Cutaneous affections *; lymphatic tumours.
Water-Plantain.	Alisma Plantago.	Root.	Acrid, diuretic, vesicant.	Dropsy; irritable bladder? calculus? intermittents; hydrophobia?
Willow.	Salix alba.	Bark.	Tonic, astringent.	Intermittents *; alvine fluxes*; hemorrhage; dyspepsia; debilities of the intestinal canal; hectic and phthisis.
Woodruff.	Asperula odorata.	Herb.	Diuretic, diaphoretic, deobstruent.	Dropsies; nephritic and calculous complaints *; obstructions of the liver and mesenteric glands; jaundice; exanthemata; cutaneous affections.
Wood-Sorrel.	Oxalis Acetosella.	Herb.	Refrigerant, antiseptic.	Putrid and bilious fevers *; inflammatory complaints; obstructions of the urinary passages; sore-throat; *externally*, scrofulous ulcers.
Wormwood.	Artemisia Absinthium.	Herb and root.	Tonic, antispasmodic, anthelmintic, discutient.	Intermittents; gout; indigestion*; loss of appetite; hysteria*; flatulence; epilepsy *; jaundice; dropsy; worms; *externally*, in anodyne fomentations, and as a clyster in worm cases.
Yarrow.	Achillea Millefolium.	Herb.	Astringent, tonic, sub-narcotic.	Hemorrhages; dysentery; cardialgia; flatulence; colic; rheumatism; nephritic complaints; fluor albus.
Yew.	Taxus baccata.	Leaves.	Narcotic. (Poisonous.)	Not sufficiently investigated.

GENERAL INDEX,

INCLUDING THE FRENCH AND GERMAN SYNONYMES OF THE PLANTS INTRODUCED.

*** The Latin and English Synonymes have an * prefixed; the French and German Synonymes are distinguished by *Italics*.

Aberraute, Ger. Southernwood.
Abies communis, i. 309.
*Abies excelsa, i. 309.
Absinthe, Fr. Wormwood.
Acanthe, Fr. Bear's-breech.
Acanthus mollis, i. 48.
*Acetosella, ii. 422.
Achillea Millefolium, ii. 431.
Ackermennig, Ger. Agrimony.
Ackerwurzel, Ger. Sweet Flag.
Aconite, Common, i. 1.
Aconitum Napellus, i. 1.
Aconit Napel, Fr. Aconite.
Acore, Fr. Sweet Flag.
Acorus Calamus, i. 313.
Adder's-tongue, i. 9.
Adiantum Capillus-Veneris, ii. 10.
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Æthusa Cynapium, i. 326.
Agrimonia Eupatoria, i. 11.
Agrimony, Common, i. 11.
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Ail, Fr. Garlic.
Ajuga Chamœpitys, i. 369.
Ajuga reptans, i. 113.
Akelei, Ger. Columbine.
Alant, Ger. Elecampane.
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Alchimille, Fr. Lady's Mantle.
Alexanders, Common, i. 14.
Alfranken, Ger. Bitter-sweet.
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Alkannawurzel, Ger. Alkanet.
Alleluia, Fr. Wood Sorrel.
*All-heal, ii. 367.
Alliare, Fr. Sauce alone.
Allium Cepa, ii. 188.
Allium sativum, i. 347.
Althæa officinalis, ii. 108.
Aluyne, Fr. Wormwood.
Anagallis arvensis, ii. 213.
Anchusa officinalis, i. 116.
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Ancolie, Fr. Columbine.
Andorn, *Gemeiner*, Ger. Horehound.
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*Arctostaphylos Uva Ursi, i. 45.
Aristoloche, Fr. Birthwort.
Aristolochia Clematitis, i. 67.
Armoise, Fr. Mugwort.
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Aronswurz, Ger. Arum.
Arrete-bœuf, Fr. Rest-harrow.
Arroche puante, Fr. Stinking Goosefoot.
*Arsmart, i. 73.
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Artemisia vulgaris, ii. 147.
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Asaret, Fr. Asarabacca.
Asarum Europæum, i. 29.
Asparagus, Common, i. 33.
Asparagus officinalis, i. 33.
Asperge, Fr. Asparagus.
Asperula odorata, ii. 419.
Asperule, Fr. Woodruff.
Aspidium Filix mas, i. 298.
Atropa Belladonna, ii. 170.

Aubifoin, Fr. Blue-bottle.
Augentrost, Ger. Eyebright.
Aunée, Fr. Elecampane.
Aurone des jardins, Fr. Southernwood.
*Ave-grace, ii. 273.
Avens, Common, i. 36.
Avolon, Fr. Pennyroyal.
*Ayegreen, ii. 42.

B.

Bachbungen, Ger. Brooklime.
Baldrian, Ger. Valerian.
Ballota nigra, ii. 24.
Ballote, Fr. Black Horehound.
Ballote Schwarze, Ger. Black Horehound.
Balm, Common, i. 39.
Bank Cresses, i. 375.
Barberry, Common, i. 42.
Bardane, Fr. Burdock.
Bärenklaue, Ger. Bear's-breech.
Bärentraube, Ger. Bearberry.
Baumwinde, Ger. Ivy.
Bearberry, i. 45.
Bear's-breech, i. 48.
Bear's-foot, i. 52.
*Bear's-foot, ii. 61.
*Bear's Whortleberry, i. 45.
Beccabunga, Fr. Brooklime.
Beet, Common, i. 55.
Beete, Ger. Beet.
Beifuss, Ger. Mugwort.
Beinwell, Ger. Comfrey.
Belladone, Fr. Deadly Nightshade.
Bellis perennis, i. 244.
Benediktenkraut, Ger. Avens.
Benoite, Fr. Avens.
Berberis, Fr. Barberry.
Berberis vulgaris, i. 42.
Berberitze, Ger. Barberry.
Bergmunze, Ger. Calamint.
Bergpfeffer, Ger. Mezereon.
Berle nodiflore, Fr. Water Parsnep.
Beta vulgaris, i. 55.
Betoine, Fr. Betony.
Betoine d'eau, Fr. Figwort.
Betonica officinalis, i. 58.
Betonie, Ger. Betony.
Betony, Water, i. 306.
Betony, Wood, i. 58.
Bette, Fr. Beet.
Betula alba, i. 63.
Beyfuss, Ger. Mugwort.
Bilsenkraut, Ger. Henbane.
Bindweed, Great, i. 61.
Bingelkraut, Wilde, Ger. Mercury.
Birch-tree, i. 63.
*Bird's Nest, i. 141.
Birke, Ger. Birch.
Birthwort, Common, i. 67.
*Bishop's Leaves, i. 307.
Bistort, i. 70.
Bistorte, Fr. Bistort.
Bitterklee, Ger. Buckbean.
Bittersüss, Ger. Bitter-sweet.
Bitter-sweet, i. 76.
*Blackberry, i. 86.
Blackthorn, ii. 294.
*Black-wort, i. 212.
Blue-bottle, i. 80.
Bluet, Fr. Blue-bottle.
Blutwurz, Ger. Tormentil.
Bockshorn, Ger. Fenugreek.
*Bog-bean, i. 104.
Bois gentil, Fr. Mezereon.
Borage, Common, i. 83.
Borago officinalis, i. 83.
*Boor-tree, i. 270.
Borretsch, Ger. Borage.
Boucage, Fr. Burnet-saxifrage.
Bouillon, Fr. Mullein.
Bouleau, Fr. Birch.
Bourg-epine, Fr. Buckthorn.
Bourrache, Fr. Borage.
Brachdistel. Ger. Eryngo.
Bramble, Common, i. 86.
Branca ursina, i. 49.
Branche-Ursine, Fr. Bear's-breach.
*Branc-ursine, i. 49.
Braunwurz, Ger. Figwort.
Brennessel, Ger. Nettle.
Briar, Common, ii. 255.
Brombeerstrauch, Ger. Bramble.
Brooklime, i. 89.
Broom, Common, i. 93.
*Brown-wort, i. 307.
Brunnenkresse, Ger. Water-cress.
Brustaland, Ger. Elecampane.
Bryone, Fr. Bryony.
Bryonia dioica, i. 97.
Bryony, Red-berried, i. 97.
Buchampfer, Ger. Wood-sorrel.
Buckbean, i. 104.
Buckthorn, Common, i. 109.
Bugle, Common, i. 113.
Bugle, Fr. Bugle.
Bugloss, Common, i. 116.
Buglosse, Fr. Bugloss.
Bugrane, Fr. Rest-harrow.
*Bull's Foot, i. 203.
Burdock, Common, i. 119.
Burnet-Saxifrage, i. 124.
Busserole, Fr. Bearberry.
Butcher's Broom, i. 128.
*Butter-and-Eggs, ii. 359.
*Buttercup, i. 227.

C.

Cabaret, Fr. Asarabacca.
Calament, Fr. Calamint.
Calamint, Common, i. 130.
Calamintha officinalis, i. 130.
*Calf's-foot, i. 25.
*Calystegia sepium, i. 61.
Cammock, ii. 249.
Camomille, Fr. Chamomile.
*Canker Rose, ii. 255.
Capillaire, Fr. Maidenhair.
*Capon's Tail, ii. 367.
Capuchon de moine, Fr. Aconite.
Caraway, Common, i. 135.
Cardamine, Fr. Cuckoo-flower.
Cardamine pratensis, i. 232.
Carduus marianus, ii. 341.
Carotte, Fr. Carrot.
Carrot, Wild, i. 139.
Carum Carui, i. 135.
Carvi, Fr. Caraway.
*Caryophyllata, i. 37.
*Caryophyllus, i. 183.
Casselunette, Fr. Blue-bottle.
Cassis, Fr. Black Currant.
Cataire, Fr. Catmint.
*Catch-weed, i. 179.
*Cat's-foot, i. 367.
Catmint, i. 146.
*Cegid, i. 387.
Celandine, Common, i. 148.
Centaurée Petit, Fr. Lesser Centaury.
Centauria Cyanus, i. 80.
Centaury, Common or Lesser, i. 152.
Cerfeuil, Fr. Chervil.
*Chamœpitys, i. 369.
Chamomile, Common, i. 156.
Chardon Marie, Fr. Lady's Thistle.
Chelidoine, Fr. Celandine.
Chelidonium majus, i. 148.
Chêne, Fr. Oak.
Chêne Petit, Fr. Wall Germander.
Cherry Laurel, ii. 67.
Chervil, Garden, i. 167.
Chestnut, Horse, i. 162.
Cheveu de Venus, Fr. Maidenhair.
Chevrefeuille, Fr. Honeysuckle.
Chicorée, Fr. Succory.
Chicory, ii. 334.
*Chironia Centaurium, i. 152.
*Christmas Rose, i. 379.
Christwurz, Ger. Black Hellebore.
Ciboule, Fr. Onion.
Cichorie, Ger. Succory.
Cichorium Intybus, ii. 333.
Cicuta major, i. 385.
Cicuta virosa, ii. 401.
Cicutaire aquatique, Fr. Water-Hemlock.
Cigue, Fr. Hemlock.
Cigue aquatique, Fr. Water-Hemlock.
Cigue Petit, Fr. Fool's Parsley.
Cinquefoil, Creeping, i. 171.
Citronelle, Fr. Southernwood; Balm.
Citronen-Melisse, Ger. Balm.
Clary, Meadow, i. 174.
Cleavers, i. 178.
*Clot-bur, i. 120.
Clove Pink, i. 183.
Colchicum Autumnale, i. 187.
Colchicum, Common, i. 187.
Colchique, Fr. Colchicum.
Cochlearia, Fr. Scurvy-grass.
Cochlearia Amoracia, ii. 27.
Cochlearia officinalis, ii. 290.
Coltsfoot, i. 201.
Columbine, Common, i. 207.
Comfrey, Common, i. 211.
Conium maculatum, i. 385.
*Consound, i. 212.
Consoude, Fr. Comfrey.
Convallaria majalis, ii. 83.
Convolvulus sepium, i. 61.
Coqaelicot, Fr. Red Poppy.
Coquelachon, Fr. Aconite.
Coriander, Common, i. 216.
Coriandre, Fr. Coriander.
Coriandrum sativum, i. 216.
Coucou, Fr. Cowslip.
*Cow-bane, ii. 401.
Cowslip, i. 221.
*Cow's Lungwort, ii. 157.
Cran, Fr. Horse-radish.
*Crane's-bill, Fœtid, i. 404.
Cresson de fontaine, Fr. Water-cress.
Cresson des pres, Fr. Cuckoo-flower.
*Crocus, Saffron, ii. 276.
Crocus sativus, ii. 276.
Crowfoot, Meadow, i. 226.
Cuckoo-flower, i. 232.
*Cuckoo Pint, i. 24.
*Cuckoo's Meat, ii. 424.
Cumin, Common, i. 236.
Cumin, Fr. Cumin.
Cuminum Cyminum, i. 236.
Currant, Black, i. 240.
Cuscuta Europæa, i. 263.
Cuscute, Fr. Dodder.
Cynoglosse, Fr. Hound's-tongue.
Cynoglossum officinale, ii. 36.
Cytisus Scoparius, i. 93.

D.

Daisy, Common, i. 244.
Dandelion, Common, i. 248.
Daphne Laureola, ii. 311.
Daphne Mezereum, ii. 125.
Darnel, Bearded, i. 254.
Datura Stramonium, ii. 344.
Daucus Carota, i. 139.
Deadly Nightshade, ii. 170.
*Dead-tongue, ii. 396.
Delphinium Staphisagria, ii. 320.
Dent de Lion, Fr. Dandelion.
Dianthus Caryophyllus, i. 183.
Digitale, Fr. Foxglove.
Digitalis purpurea, i. 332.
Dill, Common, i. 260.
Dille, Ger. Dill.
Dodder, Greater, i. 263.
Dog Rose, ii. 253.
Dollkraut, Ger. Thorn-Apple; Hemlock.
Dollwurz, Ger. Deadly Nightshade.
Dosten, *Gemeine*, Ger. Marjoram.
Dotterblume, Ger. Dandelion.
Douce-amere, Fr. Bitter-sweet.
Dropwort, Common, i. 266.
Dropwort, Water, ii. 394.
Dyer's Bugloss, i. 16.
Dwale, ii. 170.

E.

*Easter-giant, i. 71.
Eclaire, Fr. Celandine.
Eglantier, Fr. Dog Rose.
Ehrenpreis, Ger. Speedwell.
Eibe, Ger. Yew.
Eibisch, Ger. Marsh-mallow.
Eiche, Ger. Oak.
Eichenmistel, Ger. Misseltoe.
Einbeere, Ger. Herb Paris.
Eisenhütlein, Ger. Aconite.
Eisenkraut, Ger. Vervain.
Elder, Common, i. 269.
Elecampane, i. 275.
Ellebore, Fr. Bear's-foot.
Ellebore noir, Fr. Black Hellebore.
Elm, Common, i. 280.
Engelsüss, Ger. Polypody.
Engelwurz, Ger. Angelica.
Enule campane, Fr. Elecampane.
Epheu, Ger. Ivy.
Erdbeere, Ger. Strawberry.
Equisetum arvense, ii. 32.
Erdepheu, Ger. Ground Ivy.
Erdrauch, Ger. Fumitory.
Eryngium maritimum, i. 285.
Eryngo, Sea, i. 285.
Erythræa Centaurium, i. 152.
Erysimum Alliaria, ii. 287.
Erysimum officinale, i. 374.
Esselshuf, Ger. Coltsfoot.
Essigrose, Ger. Red Rose.
Eupatoire, Fr. Hemp-Agrimony.
Eupatorium cannabinum, i. 392.
Euphraise, Fr. Eyebright.
Euphrasia officinalis, i. 288.
Eyebright, Common, i. 288.

F.

Färberröthe, Ger. Madder.
Farnkraut, Ger. Fern.
Feldcypresse, Ger. Ground Pine.
Fenchel, Ger. Fennel.
Fennel, Common, i. 291.
Fenouil, Fr. Fennel.
Fenouil de porc, Fr. Hog's Fennel.
Fern, Male, i. 298.
Fenugrec, Fr. Fenugreek.
Fenugreek, Common, i. 295.
Feverfew, Common, i. 303.
Fichtenbaum, Ger. Norway Spruce Fir.
*Field Cypress, i. 370.
Figwort, Water, i. 306.
Filipendel, Ger. Dropwort.
Filipendule, Fr. Dropwort.
Fingerhut, Ger. Foxglove.
*Finkel, i. 292.
Fir, Norway Spruce, i. 309.
*Fir, Scotch, ii. 216.
Fitzkraut, Ger. Dodder.
*Five-fingered root, ii. 396.
Flachs, Ger. Flax.
Flachskraut, Ger. Toad-flax.
Flachsseide, Ger. Dodder.
Flag, Common Sweet, i. 313.
Flag, Yellow, i. 317.
Flax, Common, i. 320.
Flax, Purging, i. 324.
Flieder, Ger. Elder.
*Fluellin, ii. 308.
Fluteau plantaginé, Fr. Water-Plantain.
*Foal's-foot, i. 30. 203.
Fœniculum vulgare, i. 291.
Fool's Parsley, Common, i. 326.
*Fool-stones, Male, ii. 193.
Fougère, Fr. Fern.
Foxglove, Purple, i. 332.
Fragaria vesca, ii. 328.
Fragon piquant, Fr. Butcher's Broom.
Fraisier, Fr. Strawberry.
Frauendistel, Ger. Lady's Thistle.

Frauenhaar, Ger. Maidenhair.
Frauenmantel, Ger. Lady's Mantle.
Froschlöffel, Ger. Water-plantain.
Fumaria officinalis, i. 344.
Fumeterre, Fr. Fumitory.
Fumitory, Common, i. 344.
Fünffingerkraut, Ger. Cinquefoil.

G.

Galiote, Fr. Avens.
Galium Aparine, i. 178.
Gamander, Ger. Germander.
Gänseblume, Ger. Daisy ; Dandelion.
Gänsefuss, Ger. Goosefoot.
Garance, Fr. Madder.
Garlic, Common, i. 347.
*Garlic Treacle-mustard, ii. 288.
Garteneppich, Ger. Parsley.
Gartenlauch, Ger. Garlic.
Gartennelke, Ger. Clove-pink.
Gartenschierling, Ger. Fool's Parsley.
Gartwurz, Ger. Southernwood.
Gauchiel, Ger. Pimpernel.
Geissblatt, Ger. Honeysuckle.
Genêt, Fr. Broom.
Genevrier, Fr. Juniper.
Genist, Ger. Broom.
Geranion Robertin, Fr. Herb Robert.
Geranium robertianum, i. 404.
Germander, Wall, i. 352.
Germander, Water, i. 355.
Germandrée, Fr. Germander.
Germandrée aquatique, Fr. Water Germander.
Gernsel, Ger. Sauce alone.
Geum urbanum, i. 36.
Gichtbeere, Ger. Black Currant.
Gichtrose, Ger. Peony.
Gichtrübe, Ger. Bryony.
Gill-go-by-the-ground, i. 367.
*Gilliflower, i. 184.
Giroflée musquée, Fr. Clove Pink.
Glayeul des marais, Fr. Yellow Flag.
Glouteron, Fr. Burdock.
Glycyrrhiza glabra, ii. 92.
Gold-ruthe, Ger. Golden Rod.
Goosefoot, Stinking, i. 361.
*Goose-grass, i. 178.
Gouet, Fr. Arum.
Grateron, Fr. Cleavers.
Gremil, Fr. Gromwell.
Grenouillette, Fr. Crowfoot.
*Ground-Furze, ii. 249.
Ground-Oak, i. 353.
Ground-Pine, i. 369.
Gui, Fr. Misseltoe.
Guimauve, Fr. Marsh Mallow.
Gundermann, Ger. Ground-Ivy.
Günzel, Ger. Bugle.

H.

Haarstrang, Ger. Hog's-Fennel.
Hagerose, Ger. Dog Rose.
Hahnenfusz, Ger. Crowfoot.
Hanebane, Fr. Henbane.
Hart's-tongue, i. 372.
Haselkraut, Ger. Asarabacca.
Hauslauch, Ger. Houseleek.
Hauswurz, Ger. Stone-crop.
Hauswurzel, Ger. Houseleek.
Hauhechel, Ger. Rest-harrow.
*Heart's-ease, ii. 379.
Hedera Helix, ii. 48.
Hederich, Ger. Hedge-Mustard.
*Hedge-bells, i. 61.
Hedge-Mustard, Common, i. 374.
Hedge-Nettle, Purple, i. 377.
Heidenwundkraut, Ger. Golden Rod.
Helenenkraut, Ger. Elecampane.
Hellebore, Black, i. 379.
Hellebore noir, Fr. Black Hellebore.
Hellebore, Stinking, i. 52.
Helleborus fœtidus, i. 52.
Helleborus niger, i. 379.
*Hell-weed, i. 264.
*Helosciadum nodiflorum, ii. 407.
Hemlock, Common, i. 385.
Hemlock, Spotted, i. 385.
Hemlock Water-Dropwort, ii. 394.
Hemlock (Water), ii. 401.
Hemp-Agrimony, Common, i. 392.
Henbane, Common, i. 395.
*Henbit, ii. 24.
Hepatique etoilée, Fr. Woodruff.
*Herba Britannica, ii. 390.
*Herb-Bennet, i. 36.
Herbe à Paris, Fr. Herb-Paris.
Herbe à Robert, Fr. Herb-Robert.
Herbe aux cuillers, Fr. Scurvy-grass.
Herbe de St. Benoit, Fr. Avens.
Herbe de Saint-Jean, Fr. St. John's Wort.
Herbe sacrée, Fr. Vervain.
*Herb-Grace, ii. 273.
*Herb-Ivy, i. 379.
Herb-Paris, Common, i. 401.
Herb-Robert, i. 404.
Herbstzeitlose, Ger. Colchicum.
Himmelbrand, Ger. Mullein.
*Hind's-tongue, i. 373.
*Hip, ii. 255.

Hirschzunge, Ger. Hart's-tongue.
Hog's-Fennel, Sea, i. 407.
Hohlunder, Ger. Elder.
Holder, Ger. Elder.
*Holly, Sea, i. 285.
Holly, Common, ii. 1.
*Holme, ii. 3.
*Holy Herb, ii. 373.
Honeysuckle, Common, ii. 7.
Honigklee, Ger. Melilot.
Hop, Common, ii. 12.
Hoppen, Ger. Hop.
Horehound, Black, ii. 24.
Horehound, Fetid, ii. 24.
Horehound, White, ii. 20.
*Horse-bane, ii. 396.
Horse-Chestnut, i. 162.
*Horse-hoof, i. 203.
Horse-Radish, ii. 27.
Horse-tail, Common, ii. 32.
Houblon, Fr. Hop.
Hound's-tongue, Common, ii. 36.
House-leek, Common, ii. 40.
Houx, Fr. Holly.
Houx frelon, Fr. Butcher's-broom.
Hufflatich, Ger. Coltsfoot.
*Hulver, ii. 3.
*Hulver, Sea, i. 286.
Humulus Lupulus, ii. 12.
Hundsmelde, Ger. Stinking Goosefoot.
Hundspetersilie, Ger. Fool's Parsley.
Hundsrose, Ger. Dog Rose.
Hundszunge, Ger. Hound's-tongue.
Hyoscyamus niger, i. 395.
Hypericum perforatum, ii. 315.
Hysope, Fr. Hyssop.
Hyssop, Common, ii. 44.
Hyssopus officinalis, ii. 44.

I.

Ibischpappel, Ger. Marsh-Mallow.
If, Fr. Yew.
Ilex aquifolium, ii. 1.
Imperatoire, Fr. Masterwort.
Imperatoria Ostruthium, ii. 112.
Inula Helenium, i. 275.
Iris des marais, Fr. Yellow Flag.
Iris Pseud-acorus, i. 317.
Iris, Water, i. 317.
Isop, Ger. Hyssop.
Ivette, Fr. Ground-Pine.
Ivraie, Fr. Darnel.
Ivy, Common, ii. 48.

J.

*Jack by the Hedge, ii. 287.
Johannisbeere, Ger. Currant.
Johanniskraut, Ger. St. John's Wort.
Joubarbe grande, Fr. House-leek.
Joubarbe petite, Fr. Wall Stone-crop.
Juglans regia, ii. 380.
*July-flower, i. 183.
Jungfernkrone, Ger. Periwinkle.
*Juno's Tears, ii. 370.
Juniper, Common, ii. 53.
Juniperus communis, ii. 53.
*Jupiter's Eye, ii 42.
Jusquiame, Fr. Henbane.

K.

Kaiserwurzel, Ger. Masterwort.
Kalbsfuss, Ger. Arum.
Kalmus, Ger. Sweet Flag.
Kamille, Ger. Chamomile.
Kannenkraut, Ger. Horse-tail.
Kastanienbaum, Ger. Horse-Chestnut.
Katzenmunze, Ger. Catmint.
*Kecksies, i. 387.
Kellerhals, Ger. Mezereon.
Kerbel, Ger. Chervil.
Kiefer, Ger. Pine.
Kiene, Ger. Pine.
*King-cup, i. 227.
Kirschlorbeer, Ger. Laurel.
Klapper-rose, Ger. Corn-Poppy.
Klatschrose, Ger. Corn-Poppy.
Klebekraut, Ger. Cleavers.
Klette, Ger. Burdock.
Knabenkraut-männchen, Ger. Orchis.
*Knee Holly, i. 129.
*Knit-back, i. 212.
Knoblauch, Ger. Garlic.
Knoblauchkraut, Ger. Sauce alone.
Knoblauchs Gamander, Ger. Water Gamander.
Knotenblümigermerk, Ger. Water-Parsnep.
Konigskerzenkraut, Ger. Mullein.
Konigsrose, Ger. Peony.
Koriander, Ger. Coriander.
Kornblume, Ger. Blue-bottle.
Kran, Ger. Horse-Radish.
Krapp, Ger. Madder.
Kreuzbeere Ger. Buckthorn.
Kreuzblume, Ger. Milkwort.
Kreuzdorn, Ger. Buckthorn.
Kuhkornlee, Ger. Fenugreek.
Kümmel, Ger. Cumin.
Kunigundenkraut, Ger. Hemp-Agrimony.
Künst, Ger. Misseltoe.

L.

Labkraut, Ger. Cleavers.
Lactuca sativa, ii. 73.
*Lady's Foxglove, ii. 157.
*Lady's Mantle, ii. 60.
Lady's Smock, i. 232.
Lady's Thistle, ii. 341.
Laitier, Fr. Milkwort.
Laitue, Fr. Lettuce.
Lakrizen, Ger. Liquorice.
Lamier pourprée, Fr. Dead-Nettle.
Lamium purpureum, i. 377.
Langue de Cerf, Fr. Hart's Tongue.
Langue de Chien, Fr. Hound's Tongue.
Langue de Serpent, Fr. Adder's Tongue.
Langue de Vache, Fr. Comfrey.
Lattich, Ger. Lettuce.
Lauchel, Ger. Sauce-alone.
Laurel (Cherry), ii. 67.
Laureole, Fr. Spurge-laurel.
Laurier-Cerise, Fr. Laurel.
Lausenkraut, Ger. Stavesacre.
Lavande, Fr. Lavender.
Lavendel, Ger. Lavender.
Lavender, Common, ii. 63.
Lavandula Spica, ii. 63.
Lein, Ger. Flax.
Leinkraut, Ger. Toad-flax.
Leontodon Taraxacum, i. 248.
Lettuce, Common, ii. 73.
Lichtblume, Ger. Colchicum.
Lierre, Fr. Ivy.
Lierre terrestre, Fr. Ground Ivy.
Lilie, Weisse, Ger. White Lily.
Lilium candidum, ii. 79.
Lily, White, ii. 79.
Lily of the Valley, ii. 83.
Lime, Common, ii. 87.
Lin, Fr. Flax.
Linaire, Fr. Toad-flax.
Linaria vulgaris, ii. 358.
Linde, Ger. Lime.
*Linden-tree, ii. 87.
Lingua cervina, i. 372.
Lin purgatif, Fr. Purging-flax.
*Lint, i. 321.
Linum catharticum, i. 324.
Linum usitatissimum, i. 320.
Liquorice, Common, ii. 92.
Lis blanc, Fr. White Lily.
Liseron, Fr. Bindweed.
*Liverwort, i. 12.
Löffelkresse, Ger. Scurvy-grass.
Lolch, Ger. Darnel.
Lolium temulentum, i. 254.
Lonicera Periclymenum, ii. 7.
Löwenfuss, Ger. Lady's Mantle.
Löwenzahn, Ger. Dandelion.
*Lyne, i. 321.

M.

Maceron commun, Fr. Alexanders.
Madder, Dyer's, ii. 96.
Maiblume, Ger. Lily of the Valley.
Maidenhair, ii. 101.
Mallow, ii. 108.
Mannstreu, Ger. Eryngo.
Marguerite, Fr. Daisy.
Marienblume, Ger. Daisy.
Mariendistel, Ger. Lady's Thistle.
Mariennessel, Ger. Horehound.
Marjoram, Common, ii. 104.
Marronier d'Inde, Fr. Horse Chestnut.
Marrube, Fr. Horehound.
Marrube noir, Fr. Black Horehound.
Marrubium vulgare, ii. 20.
Marsh-Mallow, Common, ii. 108.
Masterwort, Great, ii. 112.
Matricaire, Fr. Feverfew.
Mattenkümmel, Ger. Caraway.
Mauerpfeffer, Ger. Stone-crop.
Maulbeerbaum, Ger. Mulberry.
Mausdorn, Ger. Butcher's Broom.
*Meadow-Cresses, i. 234.
*Meadow-Saffron, i. 187.
Meadow-Sweet, ii. 115.
Meermannstreu, Ger. Eryngo.
Meisterwurz, Ger. Masterwort.
Melilot, Common, ii. 118.
Melilot, Fr. Melilot.
Melilotus officinalis, ii. 118.
Melissa officinalis, i. 39.
Melisse, Fr. Balm.
Melisse, Ger. Balm.
Mentha Pulegium, ii. 202.
Mentha piperita, ii. 135.
Menthe poivre, Fr. Pepper Mint.
Menyanthe, Fr. Buckbean.
Menyanthes trifoliata, i. 104.
Mercuriale des bois, Fr. Mercury.
Mercurialis perennis, ii. 122.
Mercury, Dog's, ii. 122.
Mercury, Perennial, ii. 122.
Mezereon, Common, ii. 125.
Mezereon, Fr. Mezereon.
Milchblume, Ger. Milkwort.
Milfoil, Common, ii. 431.
*Milk Thistle, ii. 341.
Milkwort, Common, ii. 131.
Millefeuille, Fr. Yarrow.
Millepertuis, Fr. St. John's Wort.
*Mill-Mountain, i. 324.

Mint, Pepper, ii. 135.
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